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SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 5 SET #119

Dumont Model RA120 is similar to Model RA113 except for the following changes:

A partial schematic below shows the difference in the Sound Disc Circuit. Also, a schematic of the AM Tuner is shown on reverse side.

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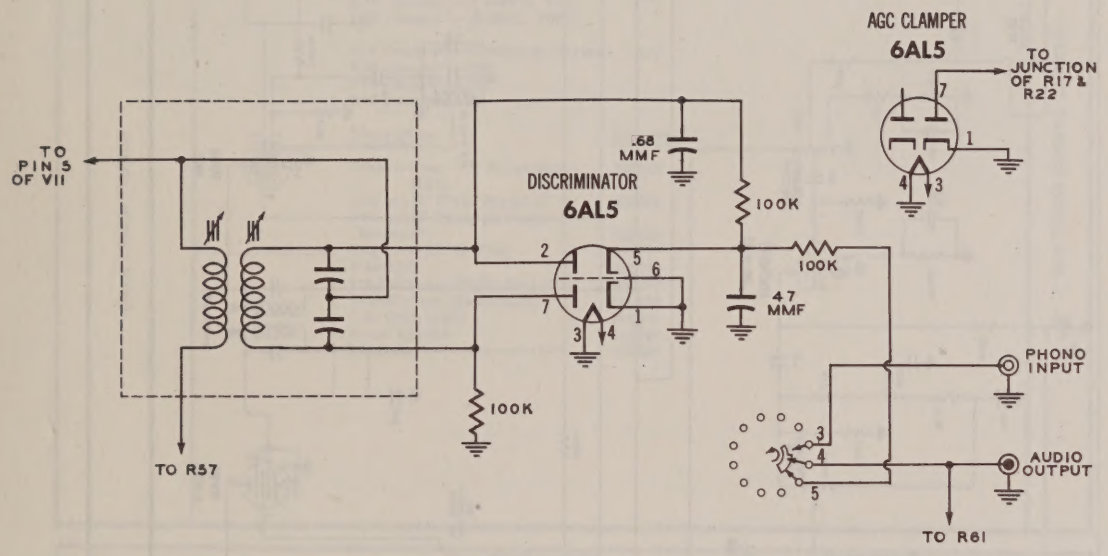

DUMONT MODEL RA120

(Continued on reverse side)

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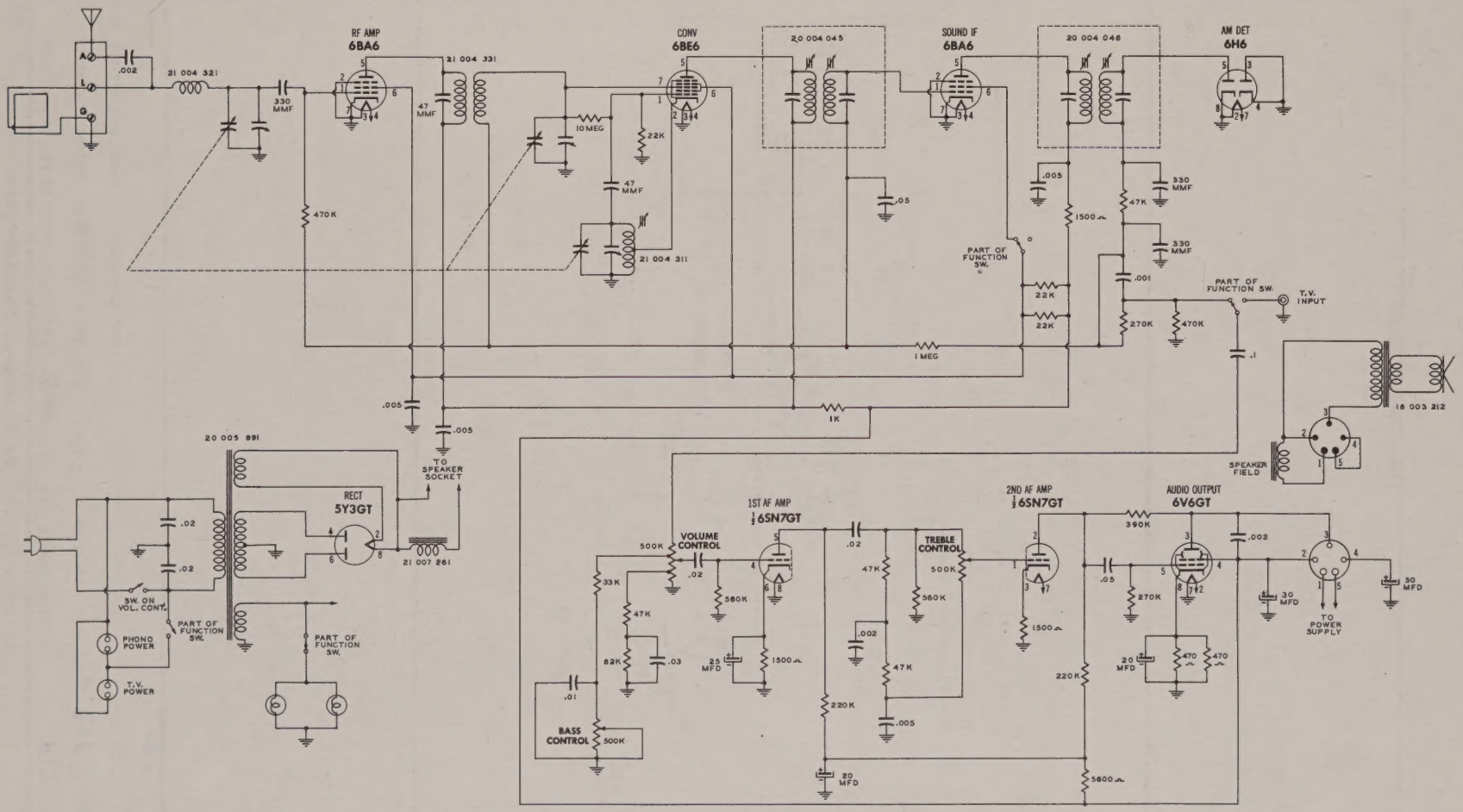
DUMONT MODEL RA120



SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 15 SET 167

CHASSIS
V-2216-2

Westinghouse Model H-704T17 Ch. V-2216-2 is similar to Model H-678K17. For service information and Part List refer to Model H-678K17. A cabinet part list is shown below.

PART NO.	DESCRIPTION
V-10928-3	Back cover assy.
V-9938-4	Knob, ON/OFF Volume
V-9939-5	Knob, Picture (Rear)
V-9940-3	Knob, Fine Tuning (Rear)
V-11146-1	Knob, Channel Selector
V-10926-1	Knob, Horizontal Brightness
V-11306-2	Plate, Front Glass
V-11308-3	Plate, Mask
V-10030-1	Speaker, 5 1/4" PM

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WESTINGHOUSE MODEL H-704T17

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 11 SET 137

Stewart-Warner Model 9126-A and 9126-B are similar to Model 9120 except Model 9126 employes a 17BP4 picture tube and a 6S4 for the Vertical Output tube

Part changes are as follows:

C25 changed to 22MMFD 350V in "Series C" only.
C59 changed 1500 MMFD 350V
C88 changed to .25MFD 200V.

R16 changed to 82 ohms in "Series C" only
R58 changed to 22K
R60 changed to 18K
R80 changed to 3K

Description	Part No.
Transformer -TV Sound Disc - (L25)	509706
Coil lst.IF Trap "Series C"	520341
Coil lst.IF Trap all except - " Series C"	509056
Slug Core for IF Trap	507357
Yoke (T5)	509704
Transformer (Horiz.Swp) (T3)	508679
Transformer (Power) (T1)	509679
Coil Trap (L29)	509615
Focus Magnet	509644
Ion Trap	509688

STEWART-WARNER MODEL 9126-A, -B

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 8 IN SET #172

In early production of Ch. RC1104, RC1104A and RC1104B used in the RCA Models 1X51, 52, 53, 54, 55, 56 and 57 some IF Transformers (L3) having incorrect primary capacitor were used, however two 5MMFD ceramic capacitors were shunted across Terminals #1 to #2 to permit use of these transformers.

In late production of Ch. RC1104, RC1104A and RC1104B, R5 was changed to 2.2Meg, R7 was changed to 4.7Meg and 33Ω resistor was added to the plate circuit of the rectifier. (Between Pin #5 of V5 and Dial Lamp (M1).

In Ch. RC1104C, RC1104D, RC1104E the tube line up was changed to 12BE6 Converter, 12BA6 IF Amp., 12AV6 Det.-AVC-AF Amp., 50C5 AF Output, 35W4 Rectifier.

Ch. RC1104-1, RC1104A-1, RC1104B-1 is the same as RC1104, A, B except the rectifier tube V5 is changed to a 35W4.

MODEL AND CHASSIS CROSS REFERENCE

MODEL NO.	1X51	1X52 1X57	1X53, 1X54 1X55, 1 X56
CHASSIS No.	RC1104 RC1104-1 RC1104C	RC1104A RC1104A-1 RC1104D	RC1104B RC1104B-1 RC1104E

RCA MODELS 1X51, 1X52, 1X53, 1X54, 1X55, 1X56, 1X57

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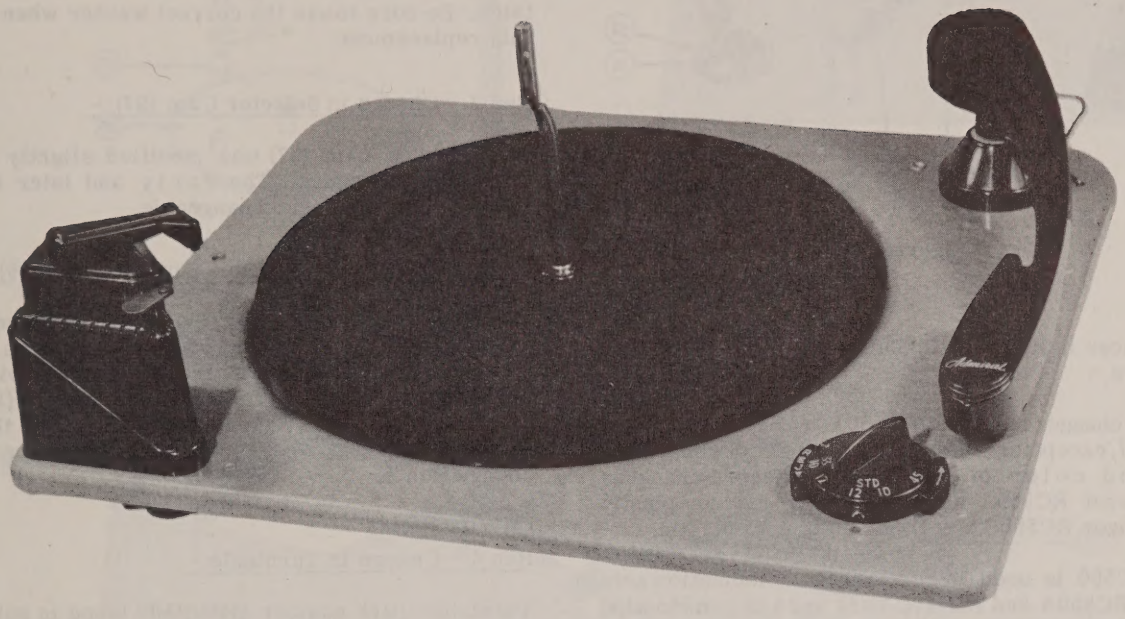
ADMIRAL
MODEL RC550



ADMIRAL
MODEL RC550

Figure 1

GENERAL INFORMATION

The Admiral Model RC550 Series Record Changer is a modification of the RC500.

The major differences are the control knobs, associated arms and links, and a few washers and screws.

This changer employes a velocity type trip which functions independently from the push-off and set-down mechanisms. In being designed this way, one of these units may fail to function properly and still not affect the other two.

For servicing the RC550 refer to material listed under model RC500.

Manufactured by

Admiral Corporation
3800 Cortland Street
Chicago, Illinois

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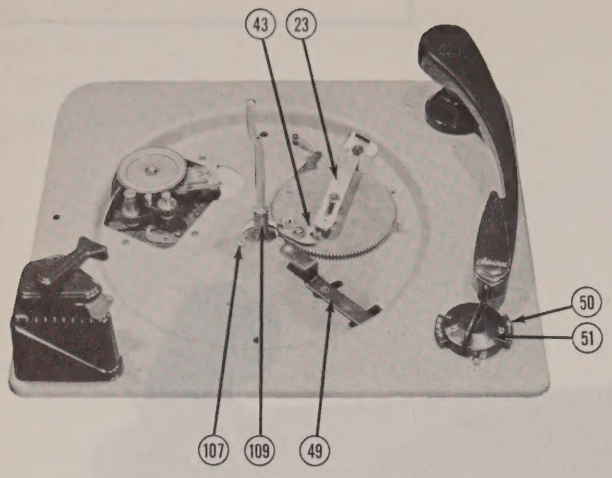

Figure 2

Differences in RC550, RC550A and RC550GA Record Changers -

Record changers RC550, RC550A and RC550GA are identical, except for differences in length of connecting leads and color of plastic trim. Record changers RC550 and RC550A are trimmed in maroon plastic and changer RC550GA is trimmed in gold plastic.

The RC550 is used in radio-phono combination sets and the RC550A and RC550GA are used in combination sets having a radio built in the TV chassis.

OPERATING INSTRUCTIONS

Size and Speed Selector Knob -

The size of the record for which the changer is set (7" - 10" or 12") is engraved on the size and speed selector knob (51) under the proper speed (33, Std., 45). By rotating the knob to the position corresponding to the type record to be played, the proper speed and set-down point will be obtained. Since only 7" 45 R.P.M. records are available no size number appears under the 45 position.

Reject Knob -

1. To start the changer into automatic operation, rotate the reject knob (50) counterclockwise and release.

2. A record may be rejected at any time by rotating the reject knob counterclockwise and releasing.

PRODUCTION CHANGES

On the model label pasted on the underside of the changer pan there appears a run number which indicates production changes. The changes are explained below under the run number heading. At the start of production, changers were stamped with Run 1.

Run 1 - Change in Push-Off Link and Stud Assembly (113) -

In early production changers, the push-off link and stud assembly (113) was made from .060" stock. In later production, this link was made from .074" stock to reduce the possibility of bending the push-off link with resulting push-off and/or trip failure.

In Run 1 changers, washer (112) is 1/16" thick. In later production changers, washer (112) is 1/32" thick. Be sure to use the correct washer when making this replacement.

Run 2 - Change in Selector Cam (97) -

The selector cam (97) was modified slightly in later production changers. The early and later selector cams are directly interchangeable.

Run 3 - Change in Turntable Support Hub (109) -

The turntable support hub (109), which is staked to the changer pan in early production changers, is now mounted to the underside of the changer pan with three self tapping screws (107). A spacer washer (106) was also added. This washer is omitted when the later turntable and thrust bearing are used; see production change Run 4.

Run 4 - Change in Turntable -

Turntable, part number G400B507 (used in early production changers), was replaced in later production with a slightly different turntable, part number G400B585. Turntable, part number G400B585 has a longer hub, and consequently uses a thinner thrust bearing, part number 415A29 item (63). The turntable support hub (109), mentioned under Run 3, must be used with turntable, part number G400B585.

Run 5 - Change in Drive Gear and Stud Assembly (46) -

Early production changers (below Run 5) used a drive gear and stud assembly (46) with a removable pivot stud (105).

Later production changers (stamped Run 5 or higher) use a drive gear and stud assembly (46A) with the pivot stud riveted to the drive gear.

The early drive gear and stud assembly (46) can be replaced with the later drive gear and stud assembly, however, trip pivot hub (113) and retaining ring (114) must be used when interchanging these parts.

Supplementary Parts List -

The parts listed for the 550 Series Changer, differ from the parts listed under information covering the model 500 changer. Use this parts list first, then use the parts list in the model 500 service manual for any part not listed here.

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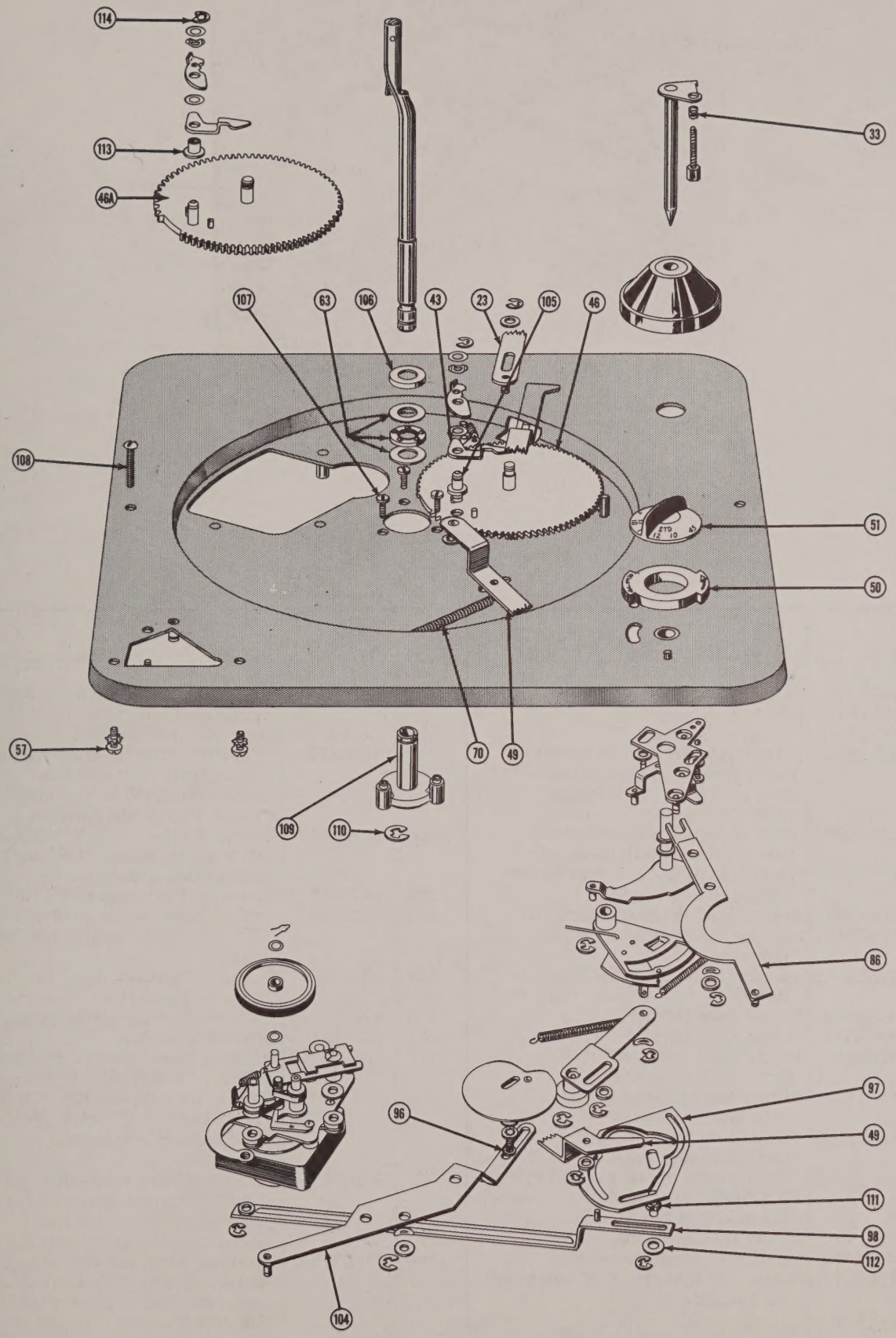

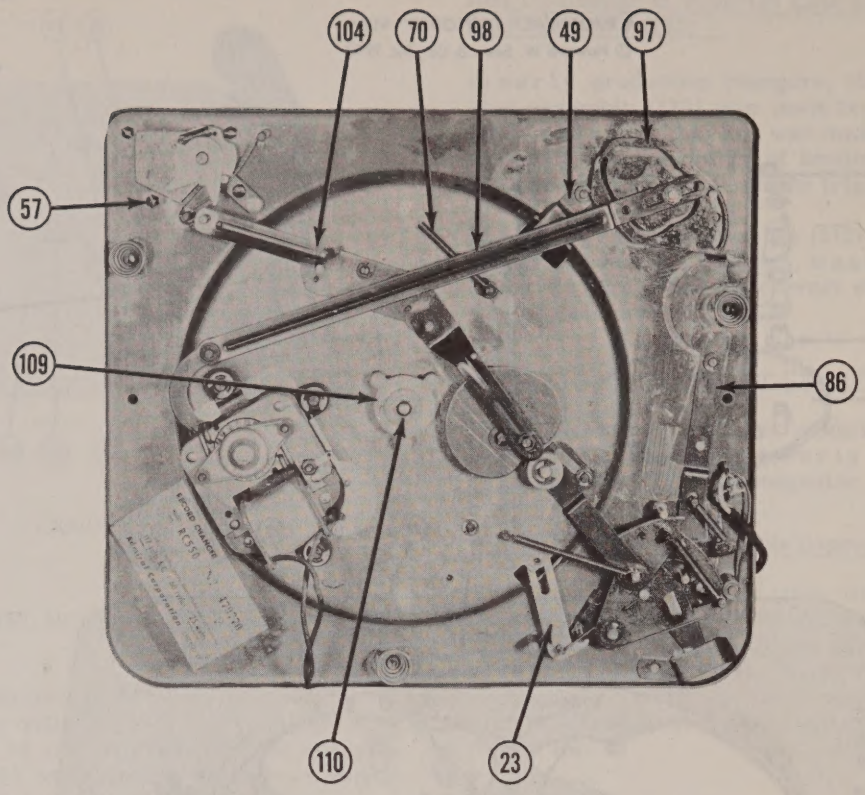

Figure 3

SUPPLEMENTARY PARTS LIST

Ref. No.	Part No.	Use and Description
23	G400A575	Trip Slider.
33	405A120	Lift Adjusting Spring.
43	401A351-1	Trip Motion Arm.
46	G400A532	Drive Gear and Stud Assembly (early type) with removable pivot stud (105). See Run 5 under Production Changes.
46A	G400A587	Drive Gear and Stud Assembly (late type) with trip pivot stud riveted to gear. See Run 5 under Production Changes.
49	G400A581	Reject Arm and Stud Assembly.
51	403A59	Size and Speed Selector Knob, (Maroon).
	403A59G	Size and Speed Selector Knob, (Gold).
50	G400A582	Reject Knob (Maroon).
	G400A582G	Reject Knob (Gold).
57	402A263	Plastiscrew, #6X5/8" R. H. (includes lock washer).
63	415A11	Thrust Bearing (early type; total thickness 9/32").
	415A29	Thrust Bearing (late type; total thickness 3/16")(415A29 can be used in place of 415A11 if a 3/32" spacer washer is used). See Run 4 in Production Changes.
70	405A140	Reject Return Spring.
86	G400A579	Set-Down Change Lever.
96	402A265	Screw, #8-32X3/8" B.H. (includes lock washer).
97	401B365	Selector Cam.
98	G400A580	Motor Shift Link (includes rubber grommet).
104	G400A562	Push-off Link and Stud Assembly.
105	402A229	Trip Pivot Stud (used only with early drive gear and stud assembly-G400A532). See Run 5 under Production Changes.
106	401A364	Spacer Washer, 13/16" OD X 29/64" ID X 5/32" thick. See Run 3 under Production Changes.
107	1A70-20	Screw, Self-tapping, #6X7/16".
108	402A258	" Hold Down" Screw, #10-32 X11/4", (for shipping purpose only).
109	404A35	Turntable Support Hub. See Run 3 under Production Changes.
110	401A355-3	"C" Washer for Centerpost.
111	402A254	Selector Cam Stud.
112	4B1-78-47	Washer, (early type), .196 "ID X1/2" OD X1/16" thick.
	4B1-68-47	Washer (late type), .196 "ID X 1/2" ODX1/32" thick. See Run 1 under Production Changes.
113	402A292	Trip Pivot Hub; used only with G400A587 drive gear and stud assembly (46A). See Run 5 under Production Changes.
114	401A355-6	Retaining Ring, for 1/8" stud; used only with G400A587 drive gear and stud assembly (46A). See Run 5 under Production Changes.

PHOTOFACT* Folder

*TRADE MARK

AIRCASTLE
MODEL 20XUT

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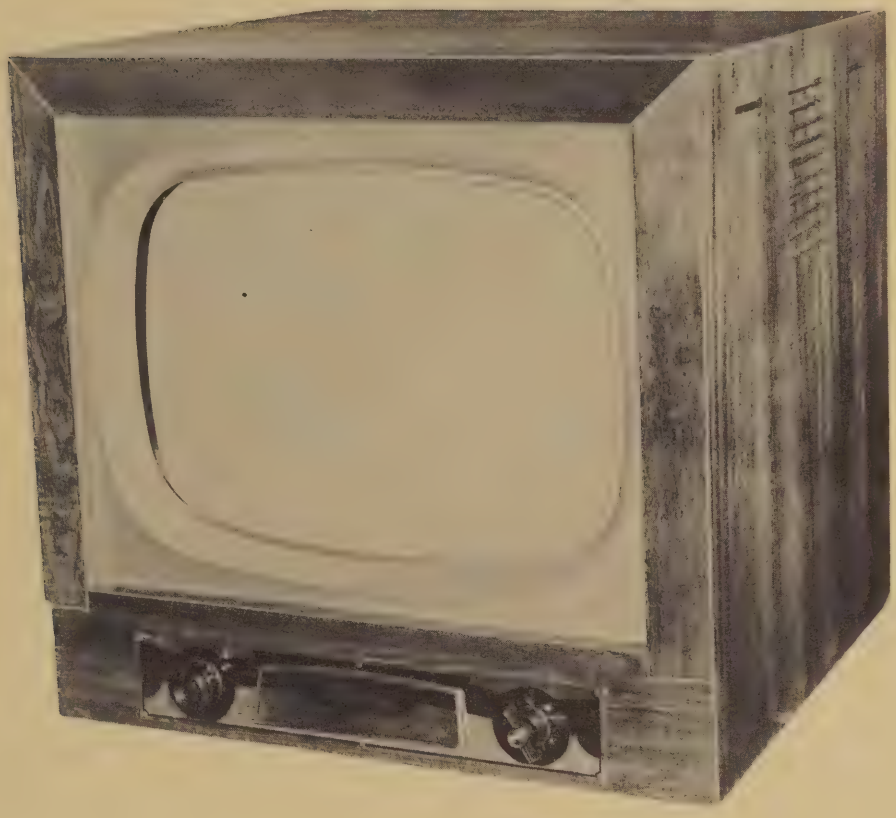

MODEL 20XUT

AIRCASTLE
MODEL 20XUT

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DATE 11-52 SET 185 FOLDER 3

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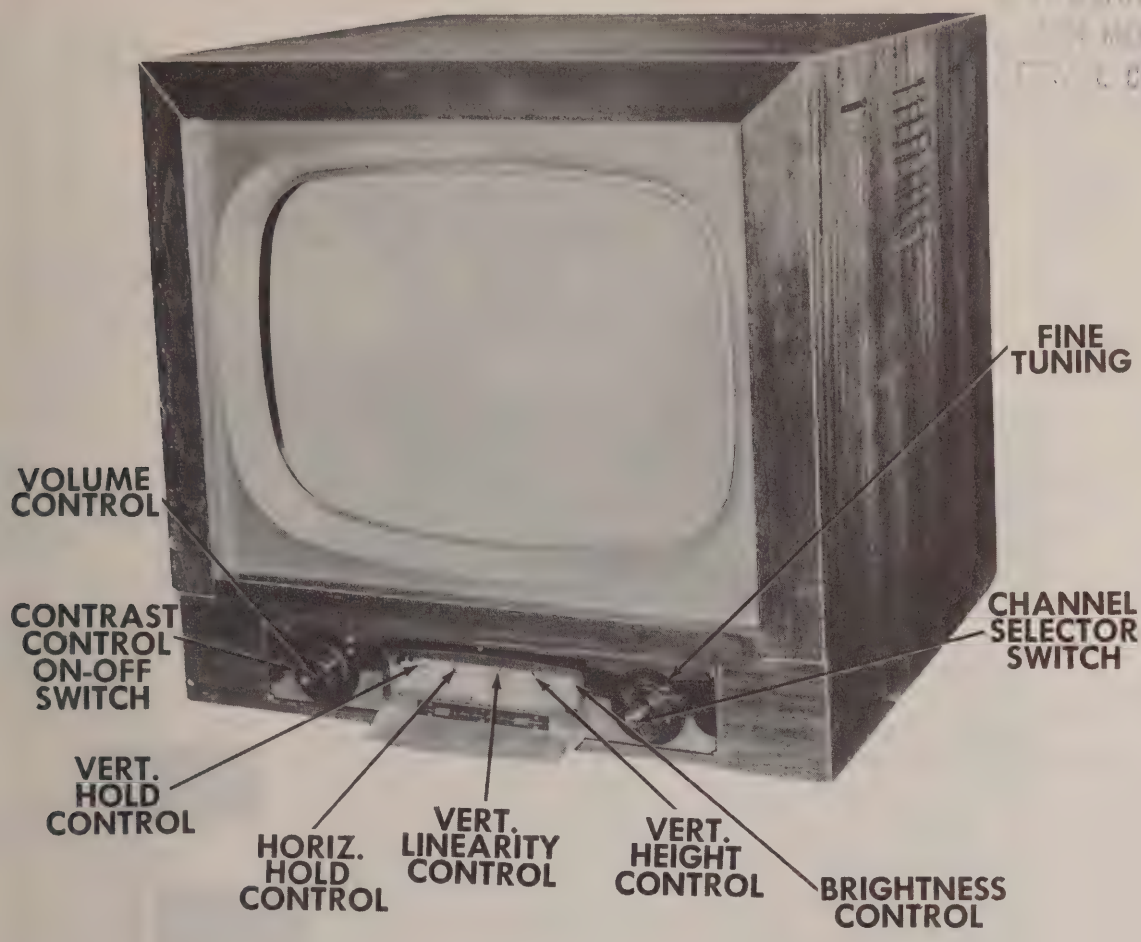

AIRCASTLE MODEL 20XUT

TRADE NAME	Aircastle Model 472.20XUT
SUPPLIER	Spiegal Inc., 1061 W. 35th. St., Chicago 9, Ill.
TYPE SET	Television Receiver
TUBES	Twenty
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	1.7 Amp @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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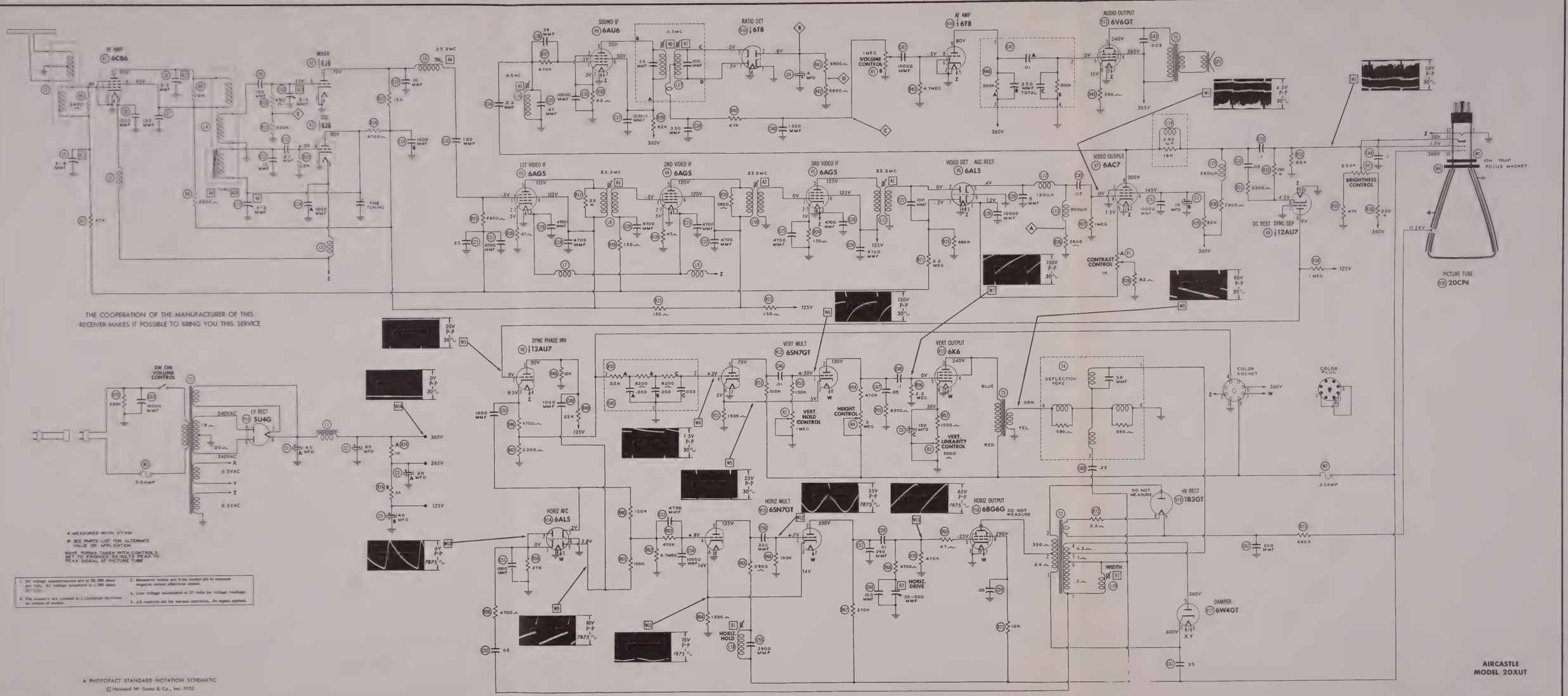
RF AMP V1 6CB6
MIXER V2 6J6
OSC V3 6J6
SOUND IF V9 6AU6
RATIO DET V10 6T8
AF AMP V10 6T8
AUDIO OUTPUT V13 6V6GT
1ST VIDEO IF V3 6AG5
2ND VIDEO IF V4 6AG5
3RD VIDEO IF V5 6AG5
VIDEO DET AGC RECT V6 6AL5
VIDEO OUTPUT V7 6AC7
DC REST SYNC SEP V8 12AU7
SYNC PHASE INV V8 12AU7
VERT MULT V12 6SN7GT
VERT OUTPUT V13 6K6
HORIZ MULT V15 6SN7GT
HORIZ OUTPUT V16 6BG6G
HORIZ AFC V14 6AL5
HV RECT V18 1B3GT
DAMPER V17 6W4GT
LV RECT V19 5U4G
PICTURE TUBE V20 20CP4
ION TRAP FOCUS MAGNET
BRIGHTNESS CONTROL
CONTRAST CONTROL 1K
VOLUME CONTROL
SW ON VOLUME CONTROL
VERT. HOLD CONTROL 1MEG
HEIGHT CONTROL .3 MEG
VERT. LINEARITY CONTROL 5000
HORIZ. DRIVE 50~500 MMF
HORIZ HOLD
WIDTH
FINE TUNING
DEFLECTION YOKE
COLOR SOCKET
COLOR PLUG
DO NOT MEASURE
340VAC
6.3VAC
5.0AMP
.25AMP
4.5MC
23.2MC
25.2MC
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A MEASURED WITH VTVM
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
1. DC voltage measurements are at 20,000 ohms per volt; AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative volume otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, No signal applied.
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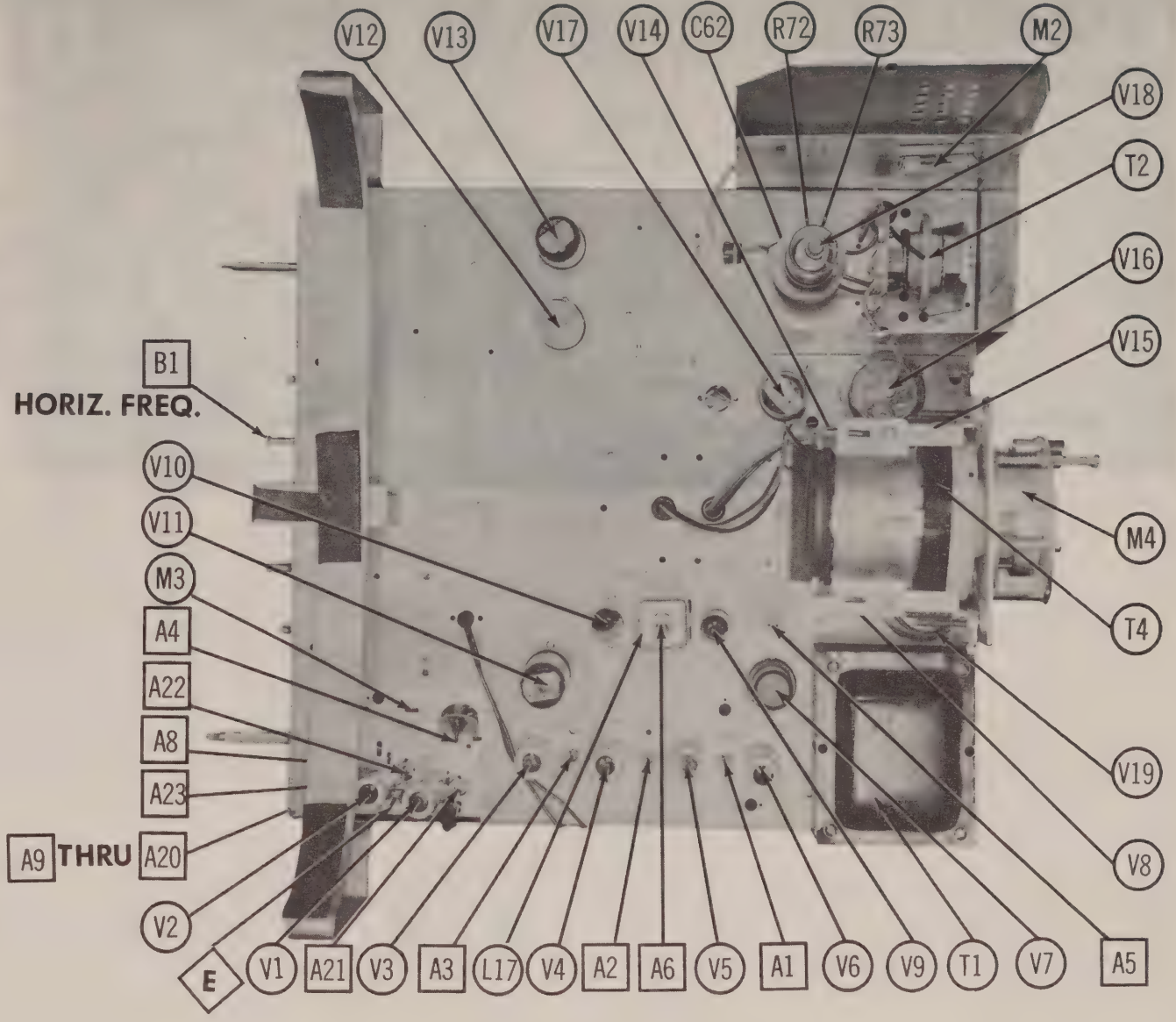
AIRCASTLE MODEL 20XUT

AIRCASTLE MODEL 20XUT



CHASSIS TOP VIEW

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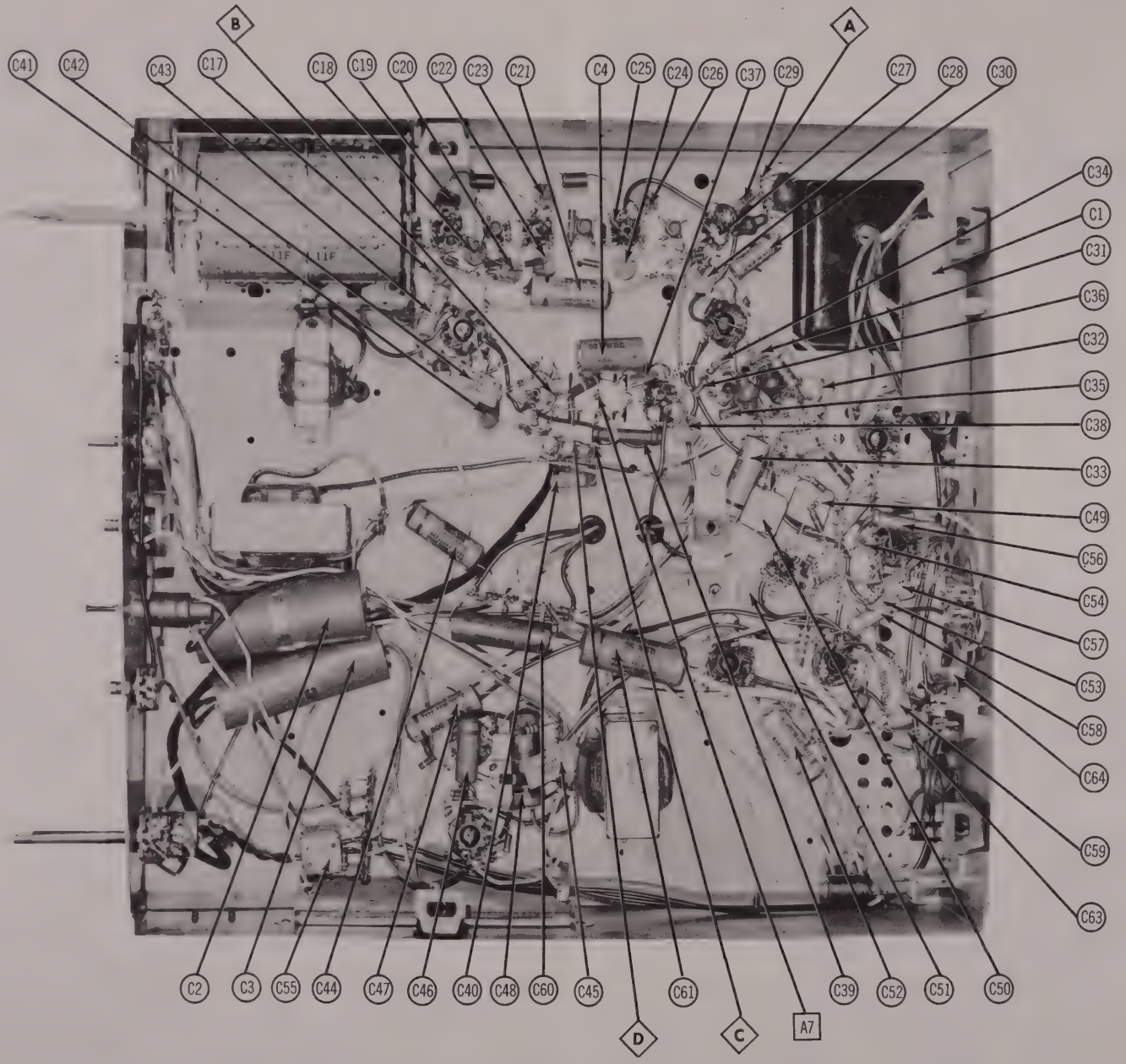

CHASSIS BOTTOM VIEW - CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART

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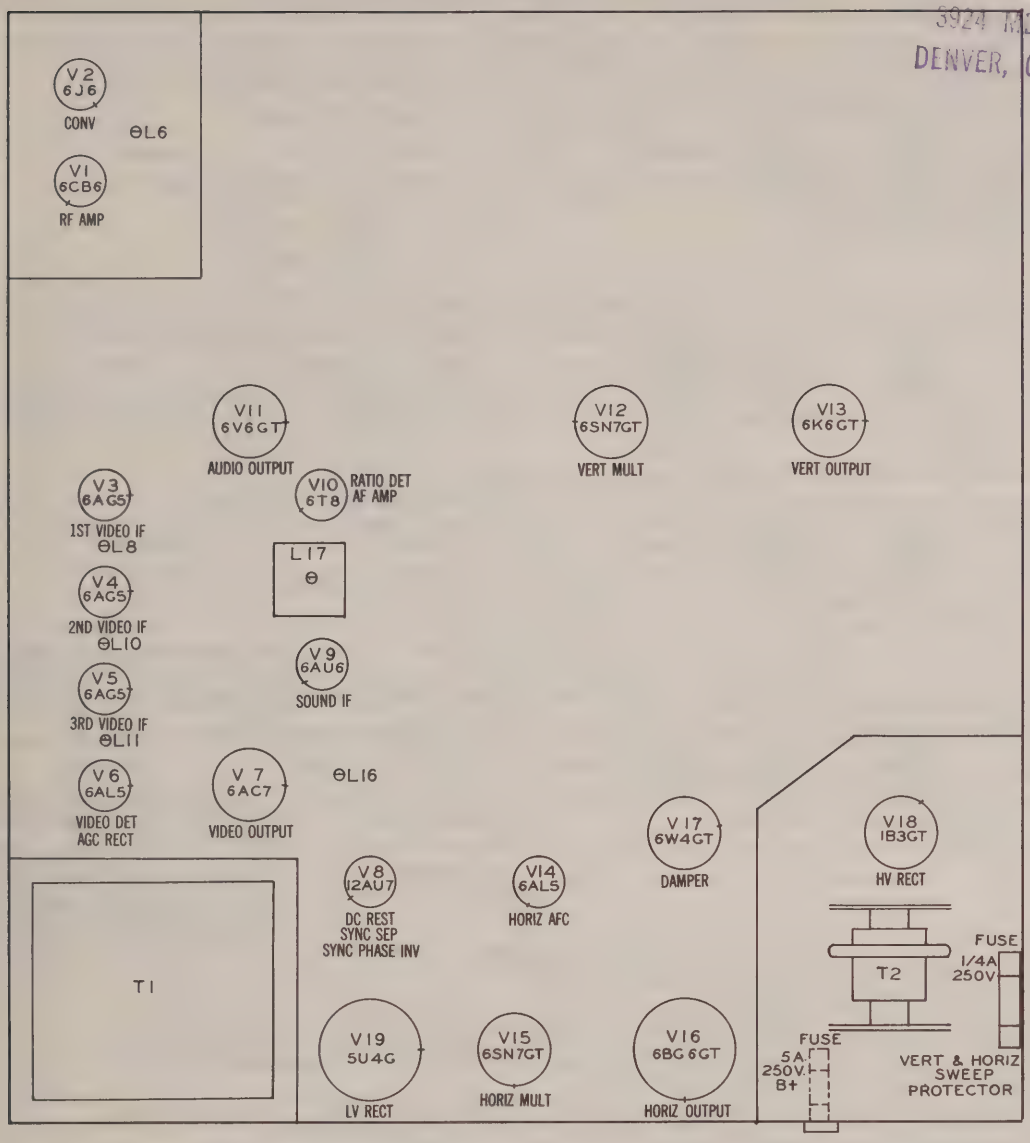


TOP VIEW

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms.
Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V19 Fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6, V7
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V7, V8, V20
Has pic, no sound-V9, V10, V11
Overloaded picture-V6

SYNC FAILURE
No vert. sync.-V8, V12
No horiz. sync.-V8, V14, V15
No vert. or horiz. sync. -V8

SWEEP FAILURE
No raster, has sound-V15, V16, V17, V18, V20 Fuse (M2)
No vertical deflection-V13
Poor vert. linearit y or foldover-V12, V13
Poor horiz. linearity or foldover-V15, V16, V17
Narrow picture-V15, V16, V17, V18, V19
Vert. off freq.-V8, V12
Horiz. off freq.-V8, V14, V15

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal multivibrator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube V2 and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 1.5 volt battery to the ungrounded side of C21. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	23.2MC (Unmod)	Any	DC probe to point (A) Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	25.2MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.25MC 22.0MC 24.3MC 25.75MC	Any	Vert Amp to point (A) Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A1 thru A4. for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Set the contrast control to maximum.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.001MFD	High side to pin 4 (grid) of 6AC7 (V7). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (B) Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	"	"	"	"	DC probe to point (C) Common to chassis.	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Set the contrast control to maximum.
Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.001MFD	High side to pin 4 (grid) of 6AC7 (V7) Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp to point (B) Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C4. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
5.	"	"	"	"	"	Vert. amp to point (C) Low side to chassis.	A7	Reconnect capacitor C4., Adjust so that 4.5MC occurs at center of crossover lines as in fig. 3 . SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary.
If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A8. It should be noted that this is an all channel oscillator circuit adjustment and should not be used to correct any individual channel. If adjustment of A8 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel adjustment screws are reached through a hole just to the right of the channel switch shaft.
The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. to point (A) . Low side to chassis.	A9	Adjust to place video marker at 50% on response curve as in fig. 4. Sound marker should be at 5% or less.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A10	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A11	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A12	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A13	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A14	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A15	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A16	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A17	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A18	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A19	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A20	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Remove the 1.5 volt bias battery.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point (E). Low side to chassis.	A21, A22 A23	Adjust for response similar to fig. 5, with markers as shown.
8.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to fig. 5. If markers fall below 70% on any channel make compromise adjustments of A21, A22 and A23 with channel switch set to that channel, then check all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

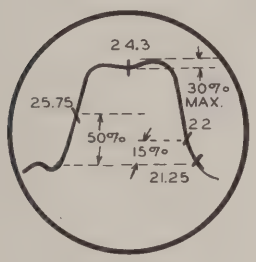


FIG. 1

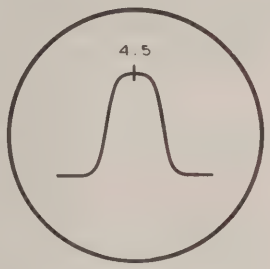


FIG. 2

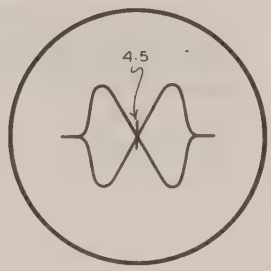


FIG. 3

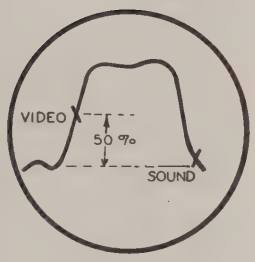


FIG. 4

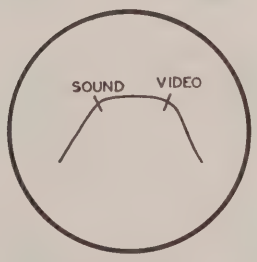
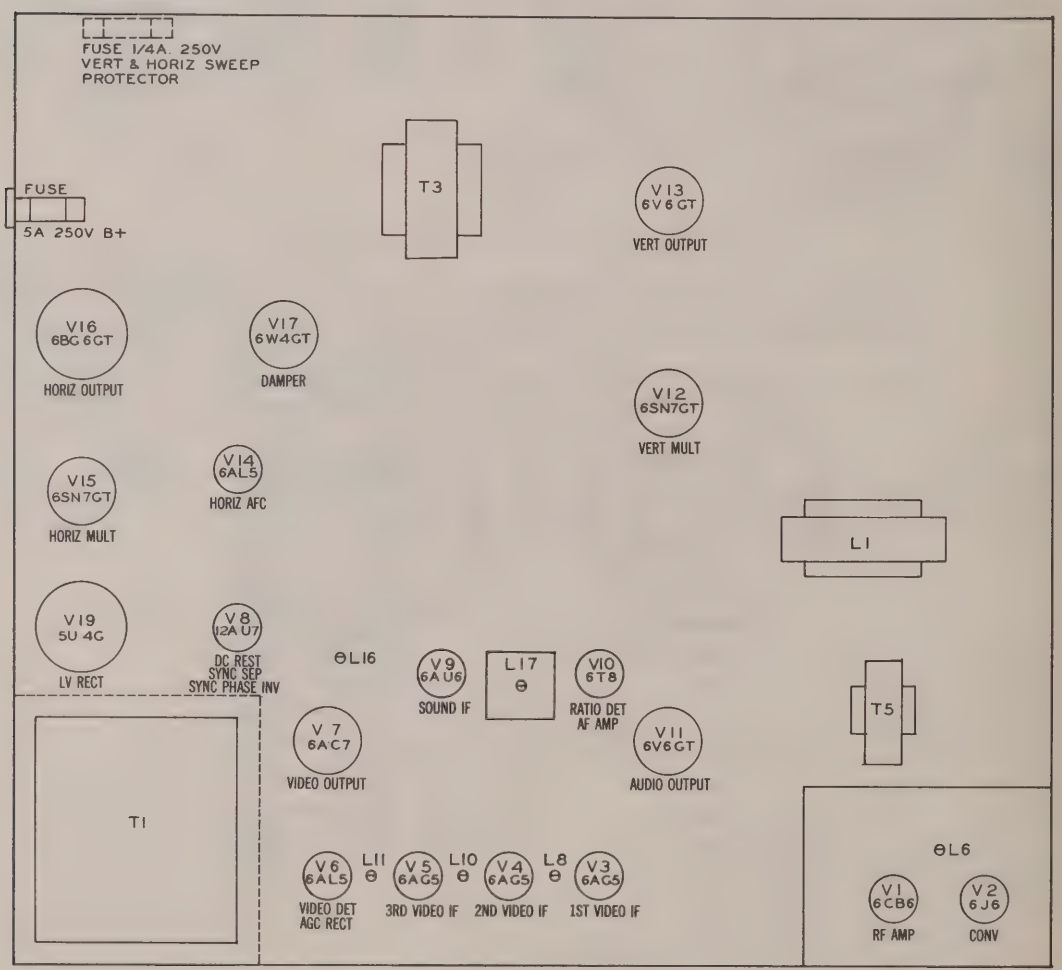


FIG. 5

RESISTANCE MEASUREMENTS

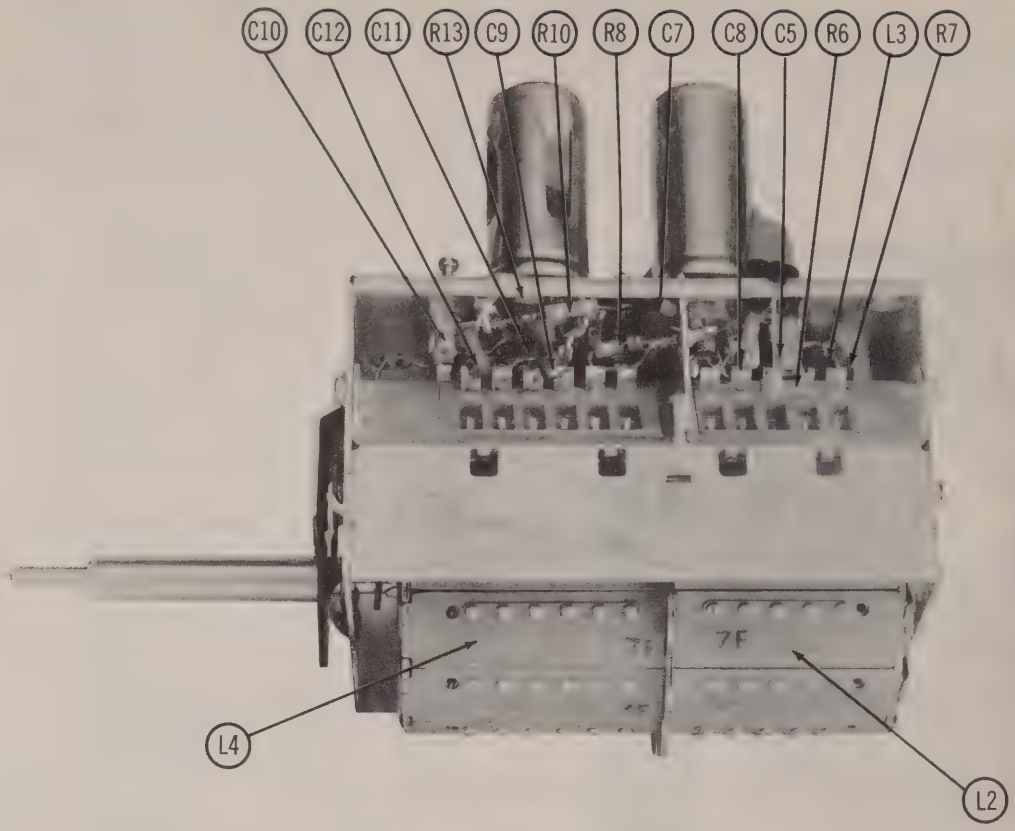
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	2.9Meg	0Ω	.1Ω	0Ω	†6.5KΩ	†6.5KΩ	0Ω		
V 2	6J6	†9KΩ	†19KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6AG5	2.8Meg	47Ω	.1Ω	0Ω	†4.3KΩ	†4.3KΩ	47Ω		
V 4	6AG5	2.8Meg	47Ω	.1Ω	0Ω	†4.2KΩ	†4.2KΩ	47Ω		
V 5	6AG5	.4Ω	150Ω	.1Ω	0Ω	†4KΩ	†4KΩ	150Ω		
V 6	6AL5	980Ω	.4Ω	.1Ω	0Ω	5.6KΩ	0Ω	680KΩ		
V 7	6AC7	0Ω	.1Ω	0Ω	1Meg	110Ω	†82KΩ	0Ω	†5.6KΩ	
V 8	12AU7	6.5KΩ	†1Meg	6.9KΩ	.1Ω	.1Ω	†1 Meg	0Ω	230KΩ	0Ω
V 9	6AU6	470KΩ	82Ω	.1Ω	0Ω	†82KΩ	†82KΩ	82Ω		
V 10	6T8	1 Meg	13KΩ	1 Meg	0Ω	.1Ω	0Ω	0Ω	4.7Meg	†500KΩ
V 11	6V6GT	INF	0Ω	†1.6KΩ	†1KΩ	500KΩ	INF	.1Ω	390Ω	
V 12	6SN7GT	800KΩ	†1Meg	1.5KΩ	40KΩ	†100KΩ	1.5KΩ	0Ω	.1Ω	
V 13	6K6GT	†82KΩ	0Ω	†855Ω	†855Ω	2.2 Meg	300Ω	.1Ω	1.8KΩ	
V 14	6AL5	27KΩ	27KΩ	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V 15	6SN7GT	100KΩ	†270KΩ	1.5KΩ	5.1Meg	†4KΩ	1.5KΩ	.1Ω	0Ω	
V 16	6BG6G	INF	0Ω	0Ω	INF	470KΩ	470KΩ	.1Ω	†10KΩ	Top Cap #24Ω
V 17	6W4GT	INF	INF	INF	INF	†66Ω	INF	¶0Ω	¶.1Ω	
V 18	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #374Ω
V 19	5U4G	INF	25KΩ	INF	19Ω	INF	20Ω	INF	25KΩ	
V 20	30CP4	0Ω	82KΩ	Pin 10 †55Ω	Pin 11 60KΩ	Pin 12 .1Ω				

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 8 OF V19
# MEASURED FROM PIN 3 OF V17
¶ MEASURED FROM PIN 7 OF V17

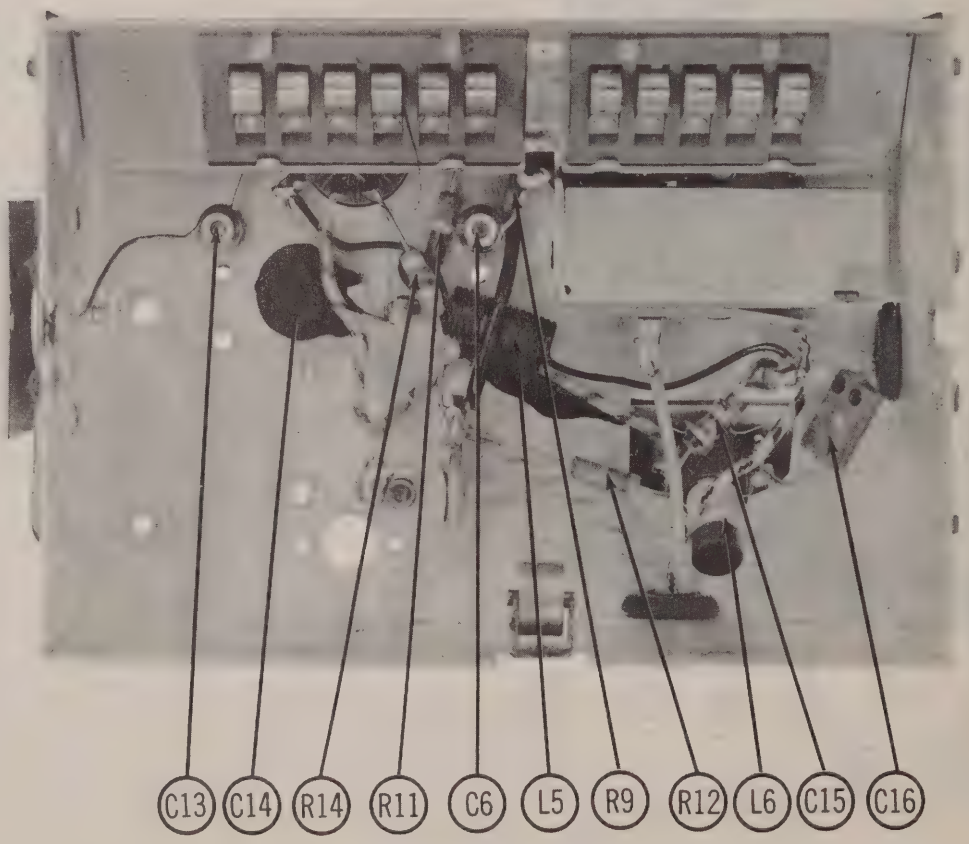


BOTTOM VIEW

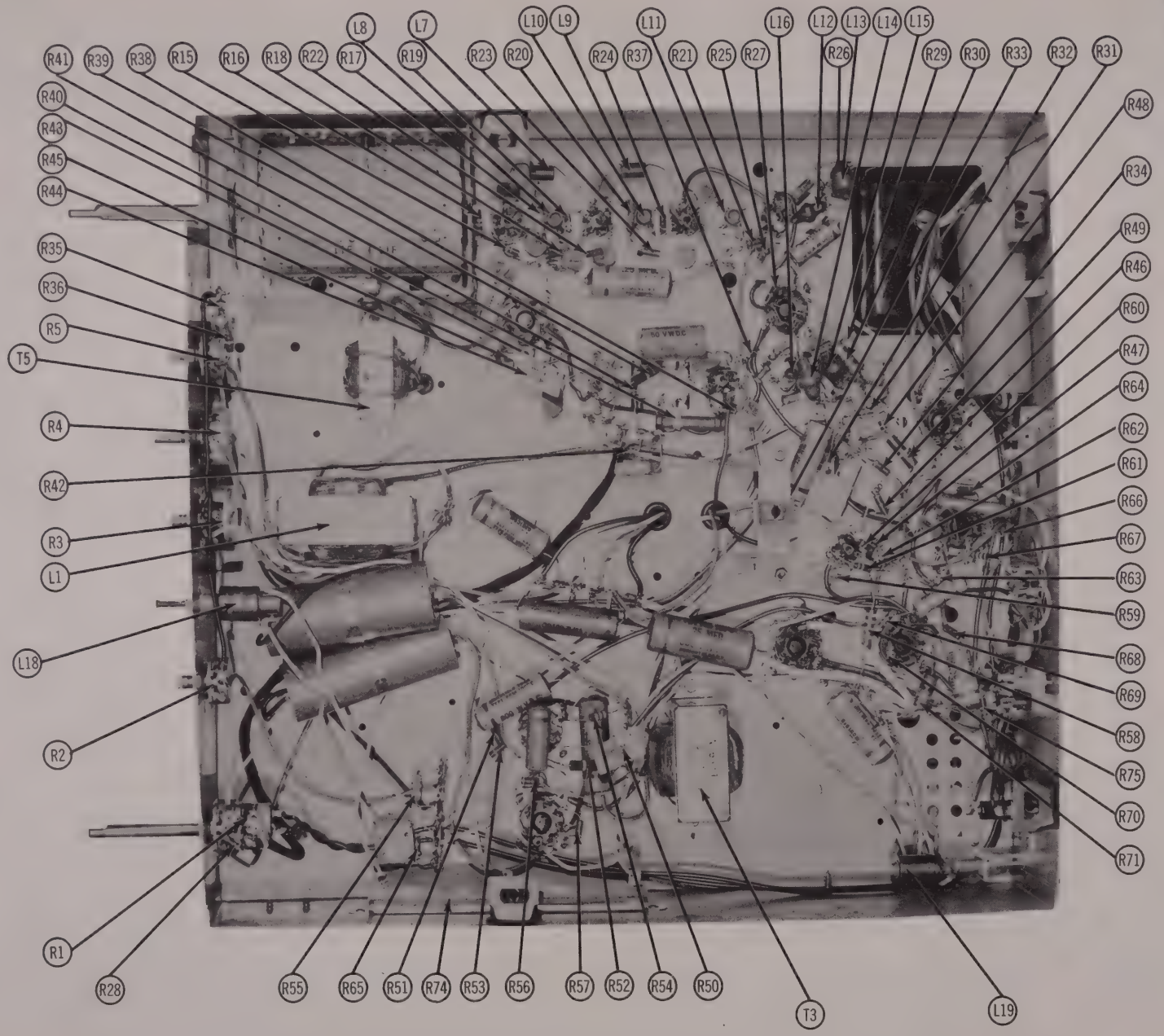
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier		6CB6	7CM	
V2	Converter		6J6	7BF	
V3	1st. Video IF Amp.		6AG5	7BD	
V4	2nd. Video IF Amp.		6AG5	7BD	
V5	3rd. Video IF Amp.		6AG5	7BD	
V6	Video Detector-AGC Rectifier		6AL5	6BT	
V7	Video Output		6AC7	8N	
V8	DC Restorer-Sync Separator-Sync Phase Inv.		12AU7	9A	
V9	Sound IF Amp.		6AU6	7BK	
V10	Ratio Detector-AF Amplifier		6T8	9E	
V11	Audio Output		6V6GT	7AC	
V12	Vert. Mult.		6SN7GT	8BD	
V13	Vert. Output		6K6GT	7S	
V14	Horiz. AFC		6AL5	6BT	
V15	Horiz. Mult.		6SN7GT	8BD	
V16	Horiz. Output		6BG6G	5BT	
V17	Damper		6W4GT	4CG	
V18	HV Rectifier		1B3GT	3C	
V19	LV Rectifier		5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V20		20CP4		12D	① Circuit changes necessary
		20CP4A	①	12D	
		20DP4A	①	12D	
		20DP4		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SPRAGUE PART No.	NOTES
C1A	40	450	CRD4445	PRS450/40-		UPT4445		2N537	TVA-2740	Red
B	40	450		40						Red
C2	80	450	CES8045	PRS450/40-		BR8045		ST845	TVA-1716	Red
				40						
C3A	20	450	CET2IC45	AFB4-63		EDL2345		4N723	TVA-2730	Red
B	10	450				BR5015			TVA-1311	Blue
C	150	50			829-3					Green
C4	4	50	CES0405	PRS150/4		BR550		TC30	TVA-1303	
C5	3-8				829-10					
C6	.5-3		CVC0308T		829-3			CT565A		
C7	130		CCU05121K	SU120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C8	1000		CDZ05103Y	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C9	100		CCU05101K	SU100	D6-101	TM5T1	GPK-101	UC-531	5GA-T1	
C10	5-3		CVC0308T		829-3			CT565A		
C11	20		CCC05200K	SI20NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2	
C12	10		CCU05100K	SU10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C13	.5-3		CVC0308T		829-3			CT565A		
C14A	1000			BPD-2X001	DD-2-102	TM5DD1	812-001	DCD-521	5HK-2D1	
B	1000									
C15	10		CCC05100K	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C16	130		CCU05121K	SU120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C17	4700		CDZ05503Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C18	4700		CDZ05502Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C19	4700		CDZ05503Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C20	4700		CDZ05502Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C21	.25	200	CPZ02254M	P488-25		PJ2P25		PT4025	2TM-P25	
C22	4700		CDZ05503Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C23	4700		CDZ05502Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C24	4700		CDZ05502Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C25	4700		CDZ05502Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C26	4700		CDZ05502Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C27	100		CCU05101K	SI100N750	TCN-100		N750L-101	NT-531	5TCU-T1	
C28	10000		CDZ05103Y	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-B1	
C29	5		CCC05050M	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCC-B-V47	
C30	.05	200	CPZ02503M	P288-05	DF-503	PJ2B5		PT405	2TM-B5	
C31	10000		CDZ05103Y	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-B1	
C32	.05	600	CPZ05503M	P688-05	DF-503	PTE5B5		PT605	6TM-B5	
C33	.1	400	CPZ04104M	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C34	2.2		CCC05022D		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C35	47		CCU05470K	SI47N750	TCN-47		N750K-470	NT-5447	5TCU-Q47	
C36	39		CCG05390M	SI39	D6-390	5W5Q4	GP1K-390	UC-5439	5GA-Q39	
C37	10000		CDZ05103Y	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-B1	
C38	10000		CDZ05103Y	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-B1	
C39	330		CMA05331M	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C40	1500	500	CMA05152M	1467-0015	D6-152	1WSD15	GP2L-152	MC256	1FM-215	
C41	10000		CDZ05103Y	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-B1	
C42A	.01									
B	250		†A-1376-6F			†PC-80		†1404-01		†102C1
C										
C43	.006	600	CWZ06502M	P688-006	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C44	.1	400	CPZ04104M	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C45A	.002			P688-002		PTE8D3		PT622		
B	.006		*A-1375-6F	P688-006	*PC-100	PTE6D5	*1405-01	PT625	*101C1	
C	.005			P688-005		PTE5D5		PT625		
C46	.01	600	CPZ06103M	P688-01	D6-103	PTE8B1	GP2-333-103	PT611	6TM-B1	
C47	.05	600	CPZ06503M	P688-05	DF-503	PTE5B5		PT615	6TM-B5	
C48	.1	600	CPZ06104M	P688-1	DF-104	PTE4P1		PT601	6TM-P1	
C49	1000	500	CMA05102K	1468-001	D6-152	1WSD1	GP2L-102	MC255	1FM-21	
C50	1000	500	CMA05102K	1468-001	D6-152	1WSD1	GP2L-102	MC255	1FM-21	

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: SPRAGUE PART No.	NOTES
C51	10000		CDZ05103Y	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-B1	
C52	.05	600	CPZ06503M	P688-05	DF-503	PTE6B5		PT615	6TM-B5	
C53	4700		CDZ05502Y	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D47	
C54	10000		CDZ05103Y	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-B1	
C55	3900	500	CMB05392K	1464-004		1DR5D4		MCB463	MB-24	
C56	330		CMA05331K	1469-00035						
C57	390	500	CMA05391K	1469-0004		5R5T4		MCB243	MB-34	
C58	.01	600	CPZ06103M	P688-01	D6-103	PTE6B1	GP2-333-103	PT611	6TM-B1	
C59	.05	600	CPZ06503M	P688-05	DF-503	PTE6B5		PT615	6TM-B5	
C60	.25	200	CPZ02254M	P488-25		PJ2P25		PT4025	2TM-P25	
C61	.25	600	CPZ06254M	684-25		PTE6P25		PT6025	6TM-P25	
C62	500	20000	CDZ20K501	HV20C	TV3-501	MMC-20T5	413-501		20DK-T5	
C63	10000		CDZ05103Y	BPD-01	DD-103	TM5B1	821-01	DC-511	5HK-B1	
C64	100						N330L-101			

* Items C45A, C45B, C45C, R50A, R50B, R50C are combined in one unit.
† Items C42A, C42B, C42C, R44A, R44B, are combined in one unit.
When replacing items separately C42B and C42C should total 250MMF.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: MALLORY PART No.	INSTALLATION NOTES
R1A	1000Ω	½	RVM-1008	QJ-258 *			UF13L	Contrast-Panel
B	1 Meg	½					UR16A	Volume-Rear
C	Switch						US-26	Attach to R1B
R2A	1 Meg	½	RVC-101N	QH-137	AG-61-5	AB-69	SU-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R2A
R3A	5000Ω	2	RVC-103N	W-5000	A43-5000	VK-135	R5000L	Vert. Linearity-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R3A
R4A	3 Meg	½	CM3350	QH-140	AG-65-5	B-84	U-59	Height
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R4A
R5A	250KΩ	½	RVC-100N	QH-130	AG-55-5	AB-50	SU-46	Brightness
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A

*CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B11-108 & P1-204 (Panel)
B13-137 & R2-216 (Rear) & SWITCH 76-1.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R6	3900Ω	½	RCC392K	BTS-3900	
R7	47KΩ	½	RCC473M		
R8	10KΩ	½	RCC103K	BTS-10K	
R9	2200Ω	½	RCC222M	BTS-2200	
R10	4700Ω	½	RCC472M	BTS-4700	
R11	220KΩ	½	RCC224M		
R12	15KΩ	½	RCC153M	BTS-15K	
R13	10KΩ	½	RCC103K	BTS-10K	
R14	4700Ω	½	RCC472M	BTS-4700	
R15	6800Ω	½	RCC682M		
R16	47Ω	½	RCC470M		
R17	22KΩ-5%	½		BTS-22K-5%	
R18	150Ω	½	RCC151M	BTS-150	
R19	47Ω	½	RCC470M		
R20	5600Ω	½	RCC562M		
R21	2.2Meg	½	RCC225M	BTS-2.2Meg	
R22	150Ω	½	RCC151M	BTS-150	
R23	150Ω	½	RCC151M	BTS-150	
R24	150Ω	½	RCC151M	BTS-150	
R25	680KΩ	½	RCC684M	BTS-680K	
R26	5600Ω	½	RCC562M	BTS-5600	
R27	1 Meg	½	RCC105M	BTS-1 Meg	
R28	82Ω	½	RCC820M	BTS-82	
R29	82KΩ	1	RCF823K	BTA-82K	
R30	5600Ω	2	RCG562K	BTB-5600	
R31	2200Ω	½	RCC222M	BTS-2200	
R32	150KΩ	½	RCC154M	BTS-150K	
R33	82KΩ	1	RCF823K	BTA-82K	
R34	1 Meg	½	RCC105M	BTS-1 Meg	
R35	47KΩ	½	RCC473M	BTS-47K	
R36	220KΩ	½	RCC224M	BTS-220K	
R37	470KΩ	½	RCC474M		
R38	82Ω	½	RCC820M	BTS-82	
R39	82KΩ	1	RCF823M	BTA-82K	
R40	47KΩ	½	RCC473M	BTS-47K	
R41	6800Ω	½	RCC682K	BTS-6800	
R42	6800Ω	½	RCC682K	BTS-6800	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R43	4.7Meg	½	RCC475M	BTS-4.7Meg	
R44A	500KΩ	½	†A-1376-6F		
B	500KΩ	½			
R45	390Ω	1	RCF391M	BTA-390	
R46	4700Ω	½	RCC472K	BTS-4700	
R47	2200Ω	½	RCC222M	BTS-2200	
R48	10KΩ	½	RCC103K	BTS-10K	
R49	22KΩ	1	RCF223K	BTA-22K	
R50A	22KΩ	½		BTS-22K	
B	8200Ω	½	*A-1375-6F	BTS-8200	
C	8200Ω	½		BTS-8200	
R51	1500Ω	½	RCC152M	BTS-1500	
R52	100KΩ	1	RCF104M	BTA-100K	
R53	150KΩ	½	RCC154M	BTS-150K	
R54	470KΩ	½	RCC474M	BTS-470K	
R55	8200Ω	½	RCC822M	BTS-8200	
R56	2.2Meg	½	RCC225M	BTS-2.2Meg	
R57	1500Ω	½	RCC152M	BTS-1500	
R58	4700Ω	1	RCF472K	BTA-4700	
R59	27KΩ	½	RCC273K	BTS-27K	
R60	100KΩ	½	RCC104K	BTS-100K	
R61	100KΩ	½	RCC104K	BTS-100K	
R62	4.7Meg	½	RCC475M	BTS-4.7Meg	
R63	470KΩ	½	RCC474M	BTS-470K	
R64	1500Ω	½	RCC152K	BTS-1500	
R65	3900Ω	½	RCC392K	BTS-3900	
R66	100KΩ	½	RCC104K	BTS-100K	
R67	270KΩ	½	RCC274K	BTS-270K	
R68	4700Ω	½	RCC472K	BTS-4700	
R69	47Ω	½	RCC470M		
R70	470KΩ	½	RCC474M	BTS-470K	
R71	10KΩ	2	RCG103M	BTB-10K	
R72	3.3Ω	½	RCC033K		
R73	680KΩ	1	RCF684M		
R74A	1000Ω	10	RWT402K		
B	3000Ω	10			
R75	220KΩ	½	RCC224K	BTS-220K	

† Items R44A, R44B, C42A, C42B, C42C are combined in one unit.
* Items R50A, R50B, R50C, C45A, C45B, C45C are combined in one unit..

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.
T1	117VAC ② 1.7A	680VCT .200ADC	5VAC ③ 3A	6.3VAC ④ 1.2A SEC 4 6.3VAC ⑤ 7.1A	B-1650-13	P-8163 ①	P-3070	TP-370	R-35BC

① Drill new mtg. holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.	NOTES
T2	374Ω Tap ④ 24Ω	11.8Ω Tap ④ .5Ω, 75Ω 8EC #2	B-1675-13A	A-8130①②	HVO-7③④	TFB-5 ②⑤	D-14②⑥	Horiz. Output Trans.
T3	800Ω	0Ω	A-1652-13	A-8112	A-3036	TSO-5 ②	A-99X ②	Vert. Output Trans
T4A	10Ω	12Ω	B-1452-9	DY-8A	MDF-70	TY-2	Y-12	Horiz. Deflection Coils
B	52Ω							Vert. Deflection Coils

① Use with width coil WC-5.
② Drill one new mtg. hole.
③ Use with width coil MWC-1.
④ Drill new mounting holes.
⑤ Use width coil (with AGC winding) with approx. range of 4 to 29 Millihenry.
⑥ Use with width coil WC-11.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.	NOTES
T5	5.2KΩ	3.4Ω	550Ω	.5Ω	A-1654-13	A-3823	A-3019	RO-303	S-5X	

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	5"	PM	3.4Ω	B-4602-15	8T-105 Mod. P5-X	5A07	

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.
L1	.200ADC	55Ω	2.2HY	A-1651-13	C-2325	C-2974 ①	TR-4200 ①	C-23X

① Drill one new mtg. hole .

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
L2	Ant. Coils	0Ω				
L3	Fil. Choke	0Ω				
L4	RF, Mixer Grid & Osc. Coils	0Ω				
L5	Fil. Choke	0Ω				
L6	1st. Video IF	1.1Ω			TV-102	
L7	Fil. Choke	0Ω		A-1481-10		
L8	2nd. Video IF	.4Ω	.4Ω			
L9	Fil. Choke	0Ω		A-1481-10		
L10	3rd. Video IF	.4Ω	.4Ω	A-1476-10		
L11	4th. Video IF	.4Ω	.4Ω	A-1476-10		
L12	Series Peaking Coil	4.8Ω		A-1482-10		
L13	Shunt Peaking Coil	14.5Ω		A-1485-10	TV-188	120 Microhenries 600 Microhenries
L14	Series Peaking Coil	17Ω		A-1483-10	TV-185 *	240 Microhenries, wound on 18KΩ resistor
L15	Shunt Peaking Coil	10Ω		A-1484-10	TV-188	380 Microhenries
L16	Sound IF	2.5Ω		A-1477-10		
L17	Ratio Det.	4.3Ω	.2Ω CT	A-1478-10	TV-110	Tertiary Winding - .5Ω
L18	Horiz. Osc.	50Ω		A-1479-10	TV-163	
L19	Width Coil	.25Ω		A-1486-10	MWC-2	

* Parallel with a 18KΩ resistor .

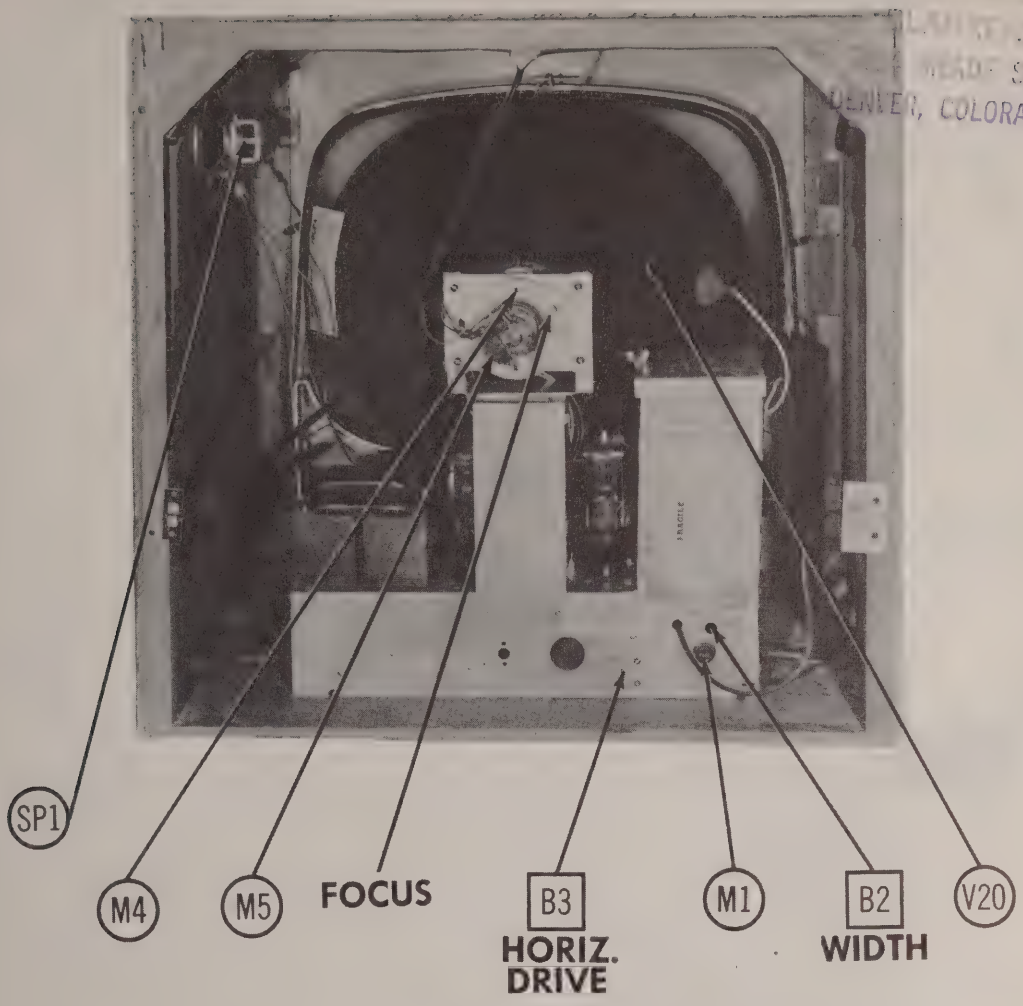
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: AIRCASTLE PART No. FUSE	REPLACEMENT DATA: AIRCASTLE PART No. HOLDER	REPLACEMENT DATA: LITTELFUSE PART No. FUSE	REPLACEMENT DATA: LITTELFUSE PART No. HOLDER	REPLACEMENT DATA: BUSS PART No. FUSE	REPLACEMENT DATA: BUSS PART No. HOLDER
M1	MTH	5A 250V	A-3751-30		312005	342001	MTH5	HKP
M2	AGC	1/4A 250V	A-3750-30		312.250	357001	AGC-1/4	4405

MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M3	RF Tuner	B-4100-33	
M4	Focus Magnet	B-4101-33	
M5	Ion Trap	A-4102-33	
B3	Trimmer	CVM50ST	Horiz. Drive (50-500MMF)

DENVER, COLORADO



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably at test pattern.

Adjust the horizontal hold (B1) until the picture synchronizes horizontally.

Turn the width control slug (B2) fully clockwise.

Adjust the horizontal drive trimmer (B3) for best compromise between maximum brightness and horizontal linearity.

Adjust B2 for a picture slightly wider than necessary to fill the picture mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 8 wood screws. Remove rear cover.
3. Disconnect built-in antenna & speaker.
4. Loosen 2 wood screws. Remove antenna bracket.
5. Remove 2 wood screws. Remove AC interlock.
6. Remove 2 wood screws and 4 chassis bolts.. Remove chassis.
7. Remove 2 speaker nuts. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

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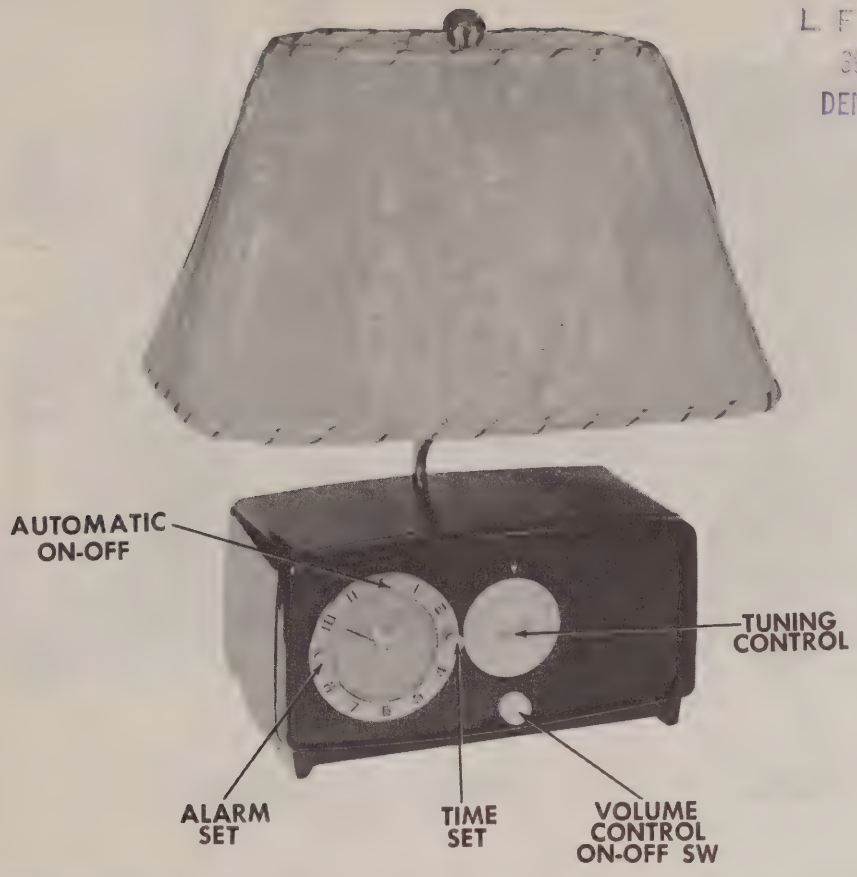
AIRCASTLE
MODELS 659.520E, I



AIRCASTLE
MODELS 659.520E, I

TRADE NAME	Aircastle Models 659.520E, I
SUPPLIER	Spiegel Inc., 1061 W. 35th. St., Chicago 9, Ill.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock & Lamp.
TUBES (Four)	Types 12BE6 Conv., 12AV6 (or) 12AT6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING .25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 12BE6 (V1). Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620 KC	"	"	A3	"
3.	100MMF	High side to antenna connection on antenna coil (disconnect antenna hank to reduce radiation) Low side to B-.	1400 KC	Tune to 1400KC signal	"	A4	Adjust for maximum output.

To set pointer turn tuning gang fully closed and set last raised pip at low frequency end of dial opposite index mark on cabinet.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Converter	12BE6	12BE6	7CH	
V2A	Det.-AVC-AF Amp	12AV6	12AV6	7BT	
B	Det.-AVC-AF Amp	12AT6	12AT6	7BT	
V3	Audio Output	50C5	50C5	7CV	
V4	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	40	150		PRS150/40-40		EDL4415		2N511	TVA-2445	Note 1
B	40	150								Note 1
C2	.05	200	30-5	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	Note 2
C4	.002	600	30-12	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C5	.01	600	30-1	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C6	.01	600	30-1	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C7	.05	400	30-6	P488-05		PTE4S5		PT415	4TM-S5	
C8	.05	200	30-5	P288-05		PJ2S5		PT415	2TM-S5	

Note 1. Some Models use 50MFD (C1A) and 30MFD (C1B) (Part #32-2)
Note 2. Some Models use 100MMF in this application (Part #31-1)

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2Meg	½	25-2	Q13-139	AG-66-Z	AB-76	U-55	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	KB-1	US-26	Attach to R1A

RESISTORS

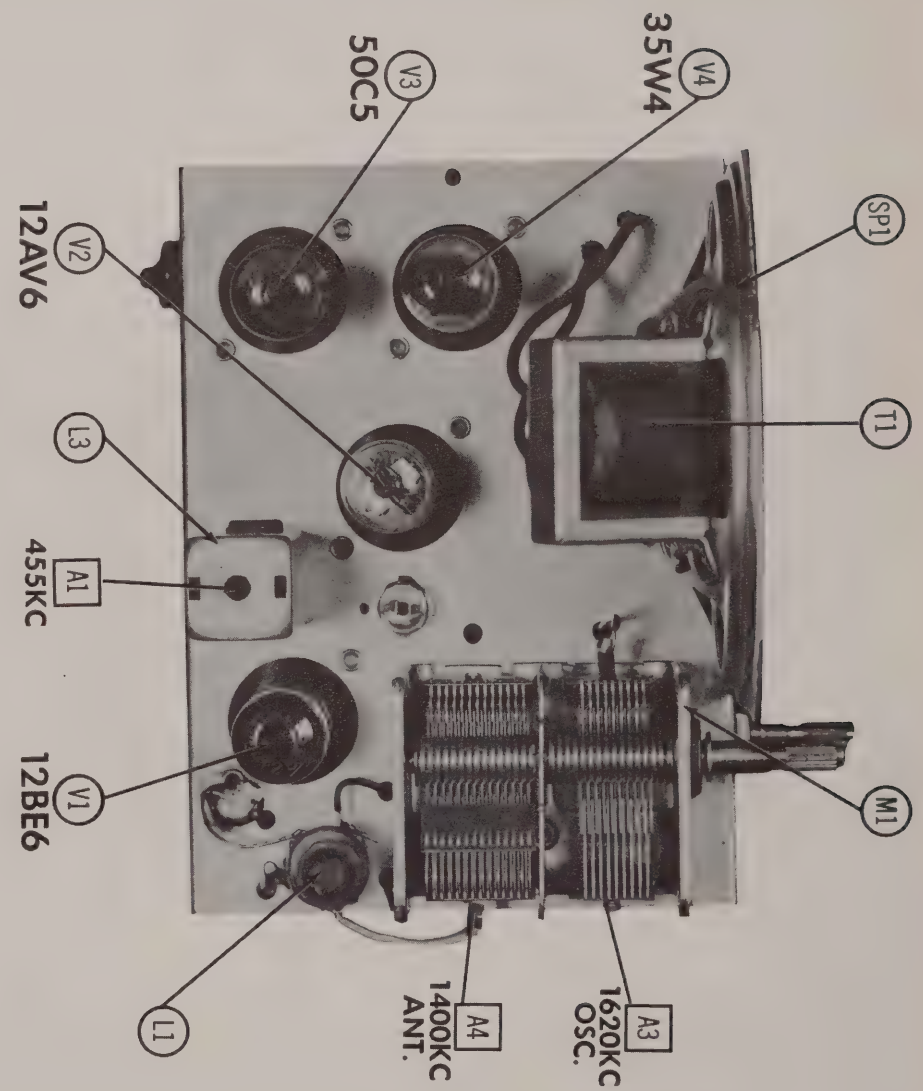
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	22KΩ	½	20-5	BTS-22K	
R3	3.3Meg	½		BTS-3.3Meg	Note 1
R4	10Meg	½	20-14	BTS-10Meg	
R5	470KΩ	½	20-9	BTS-470K	
R6	470KΩ	½	20-9	BTS-470K	Note 2
R7	2700Ω	1		BTA-2700	Note 3
R8	22Ω	½	20-1		
R9	22Ω	1			Note 4
R10	22Ω	1			Note 5

Note 1. Some Models use a 4.7Meg resistor in this application.
Note 2. Some Models use a 330KΩ resistor in this application.
Note 3. Some Models use a 2200Ω resistor in this application.
Note 4. Some Models use a 51Ω resistor in this application.
Note 5. Not used in all Models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	2KΩ	3.3Ω	130Ω	.5Ω	Part of spkr.	A-3332	A-3025	RO-2 ①	S-2X ①	① Drill one new mtg. hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	AIRCASTLE PART No.	VIKING PART No.	QUAM PART No.	
SP1	4"	PM	33Ω	10-1	4J4	4A07	

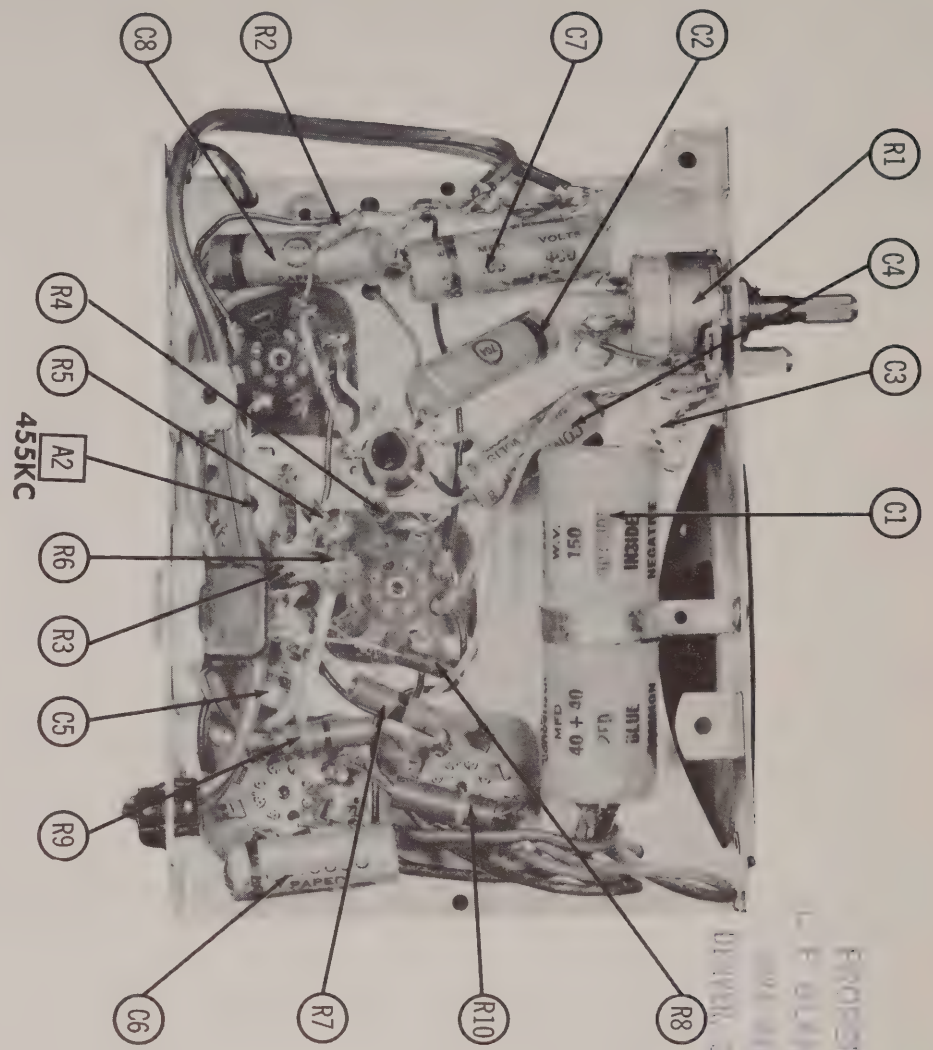
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIRCASTLE PART No.	MERIT PART No.	
L1	Ant. Coil	70Ω	2.6Ω	61-2		
L2	Osc. Coil	.5Ω	5.7Ω	61-1		
L3	IF Trans.	22Ω	21Ω	62-2	BC-353	

MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M1	2 Gang Var. Cap.	35-1	(27-479MMF, 27-197MMF)
	Clock	13-1	Sessions
	Knob	50-4	Volume
	Knob	50-3	Tuning

CHASSIS—BOTTOM VIEW



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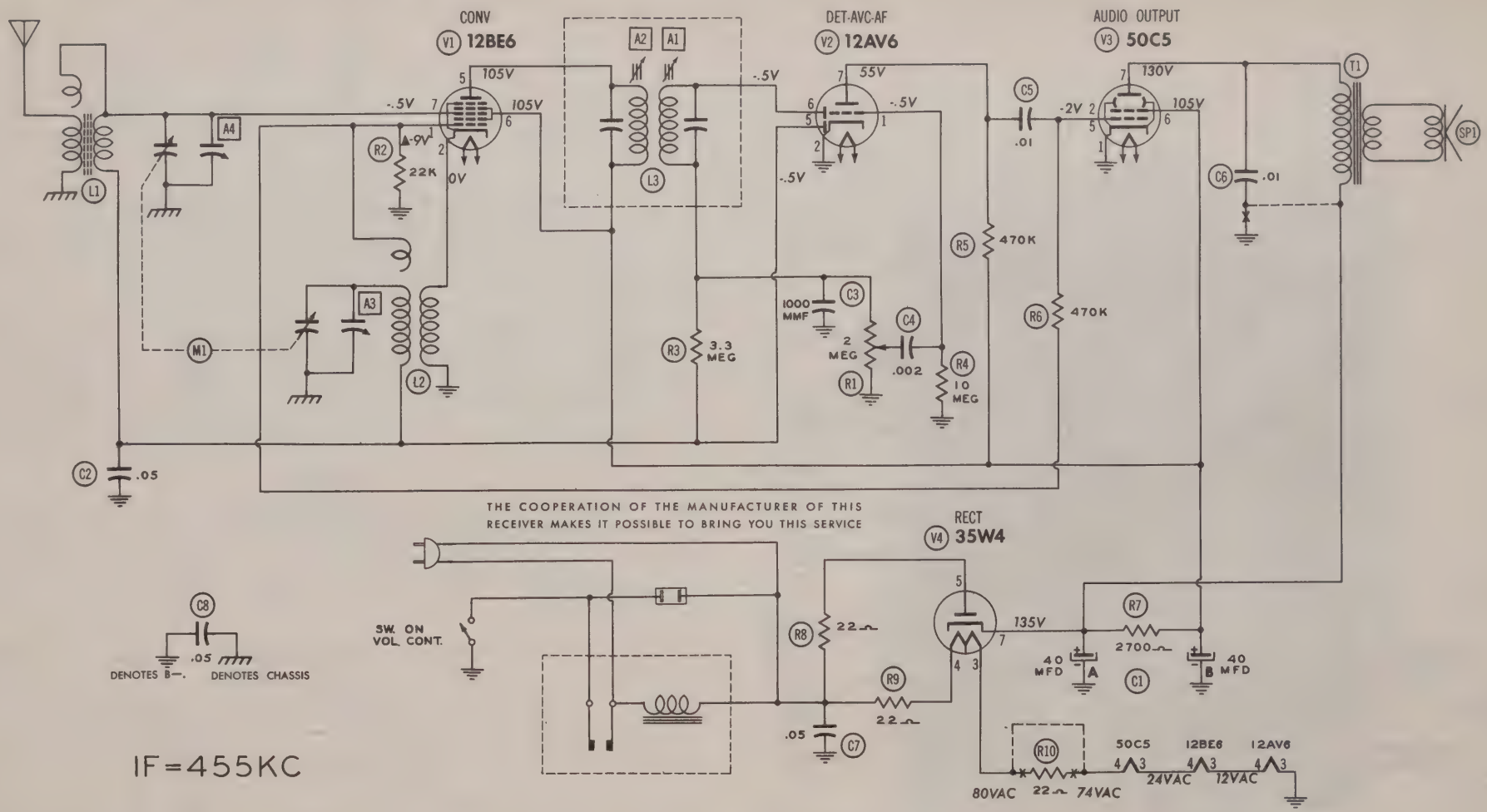
MODEL 659.520 E, L.



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.5Ω	12Ω	24Ω	†2.7KΩ	†2.7KΩ	5.3Meg
V 2	12AV6	10Meg	0Ω	0Ω	12Ω	5.3Meg	2Meg	†470KΩ
V 3	50C5	0Ω	490KΩ	24Ω	74Ω	490KΩ	†2.7KΩ	†130Ω
V 4	35W4	INF	INF	96Ω	131Ω	175Ω	113Ω	30KΩ

† MEASURED FROM PIN 7 OF V4
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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185–4

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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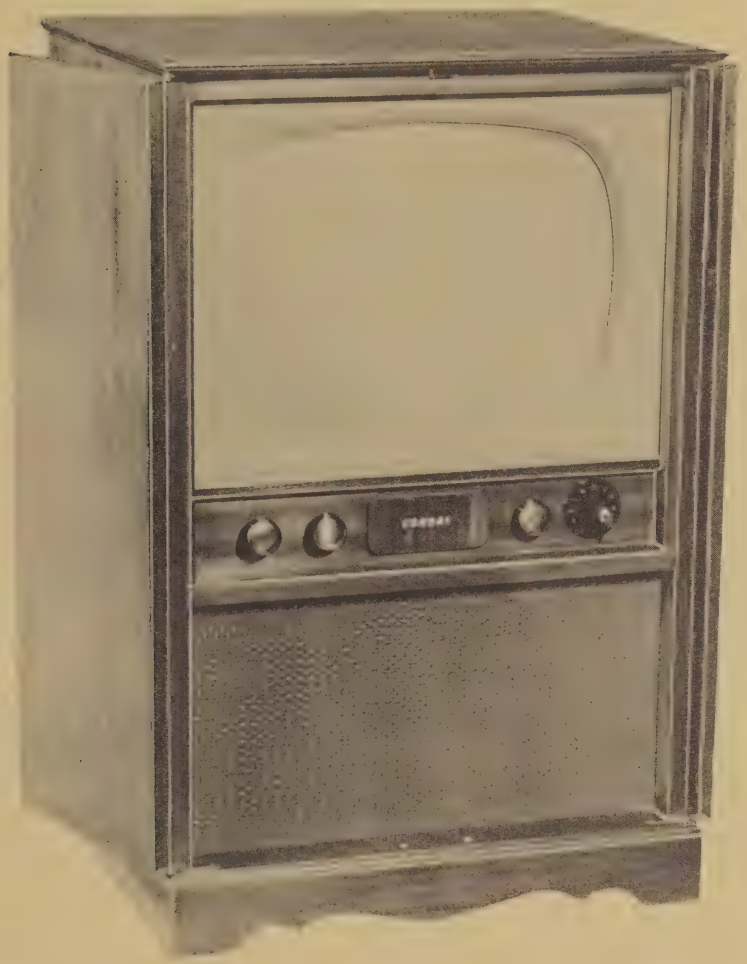

MODEL 35-M-61

CONRAC
MODELS 61,64

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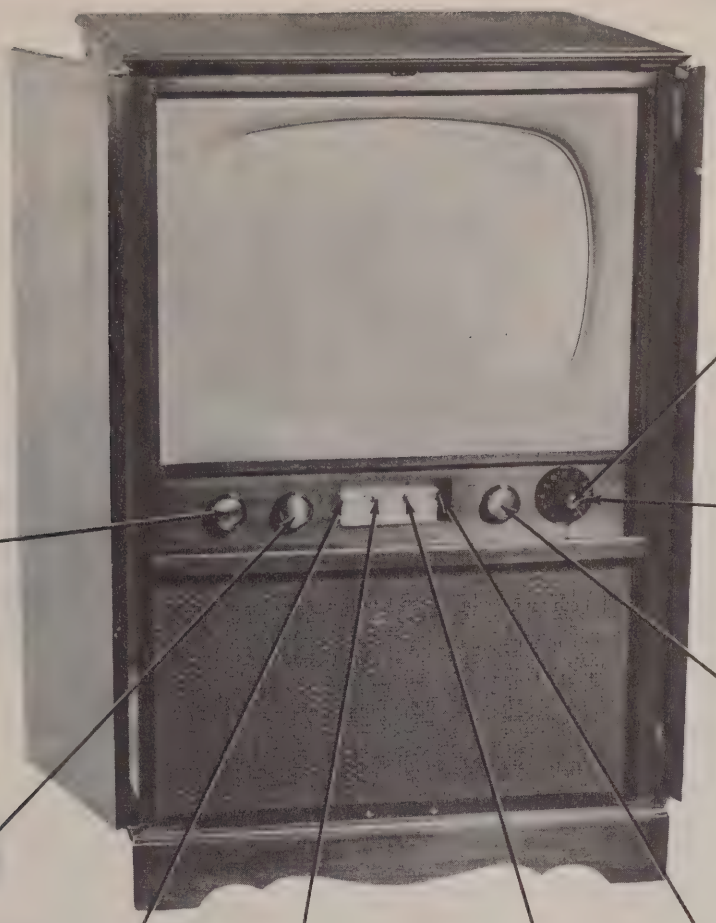

CONRAC
MODELS 61, 64

CONRAC 35-M-61

TRADE NAME	Conrac Models 35-M-61, 35-W-61, 36-B-61, 37-P-61, 38-M-61, 38-B-61, 39-M-61, 40-M-64, 40-W-64, 41-B-64, 42-P-64, 43-M-64, 43-B-64
MANUFACTURER	Conrac Inc., 649 W. Foothill Blvd., Glendora, Calif.
TYPE SET	Television Receiver
TUBES	Twenty-three
POWER SUPPLY	110-120 Volts -60 Cycle
RATING	2 Amp @ 117 Volts AC
TUNING RANGE—	Channels 2 thru 13

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Tube Placement Chart (Top View) 5

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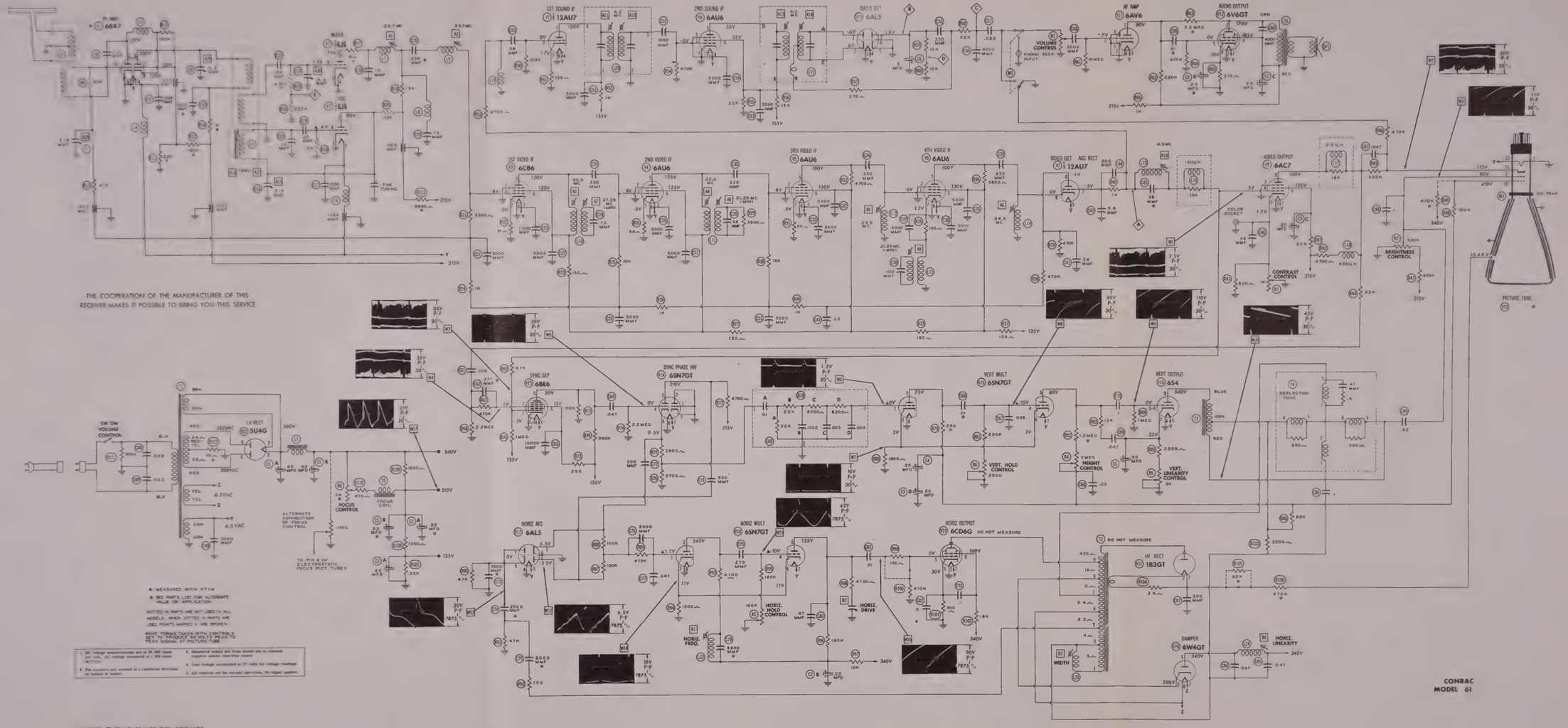

A MEASURED WITH VTVM

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.

WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 80 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE

1. DC voltage measurements are at 20,000 ohms per volt, AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, its original applied.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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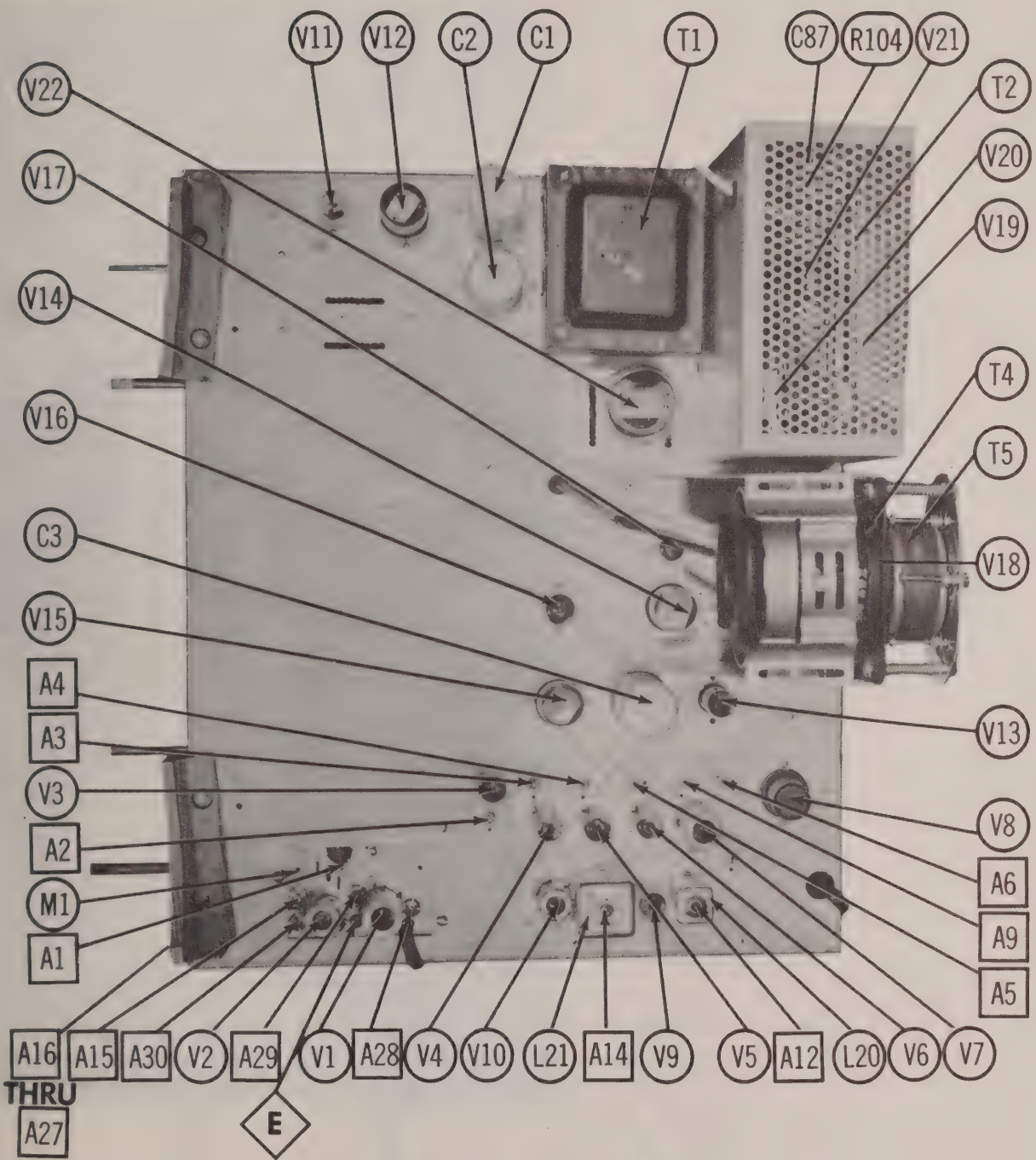
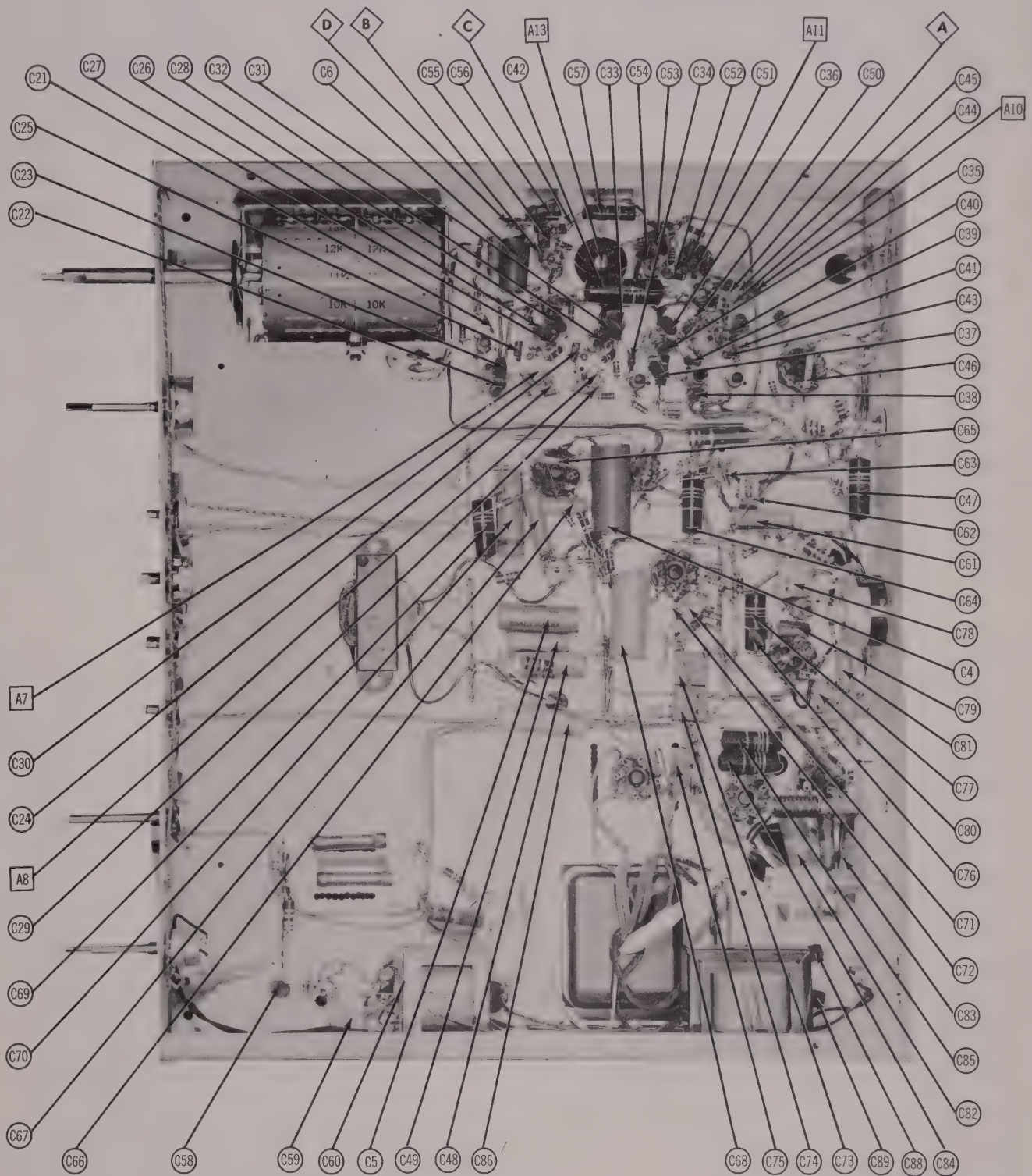
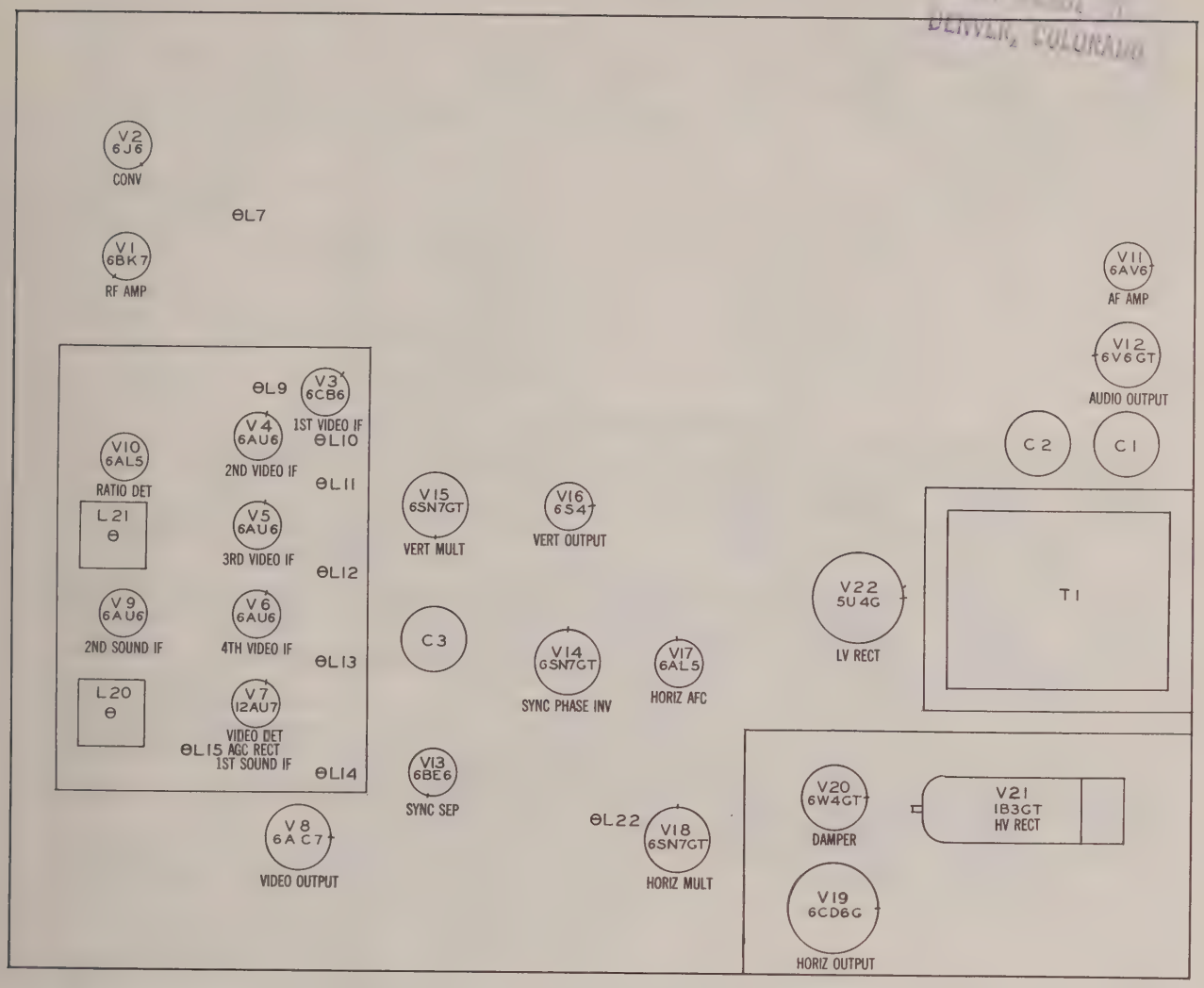


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TOP VIEW

CONRAC MODEL 61

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V22

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6, V7
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V8, V23
Has pic, no sound-V7, V8, V9, V10, V11, V12
Overloaded picture-V7

SYNC FAILURE
No vert. sync. -V14, V15
No horiz. sync. -V14, V17, V18
No vert. or horiz. sync-V13, V14

SWEEP FAILURE
No raster, has sound-V18, V19, V20, V21, V23
No vertical deflection-V16
Poor vert. linearity or foldover-V15, V16
Poor horiz. linearity or foldover-V18, V19, V20
Narrow picture-V18, V19, V20, V21, V22
Vert. off freq. -V14, V15
Horiz. off freq. -V14, V17, V18

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube, V18.

VIDEO IF ALIGNMENT

Remove the converter tube, V2, and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C42. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	23.7MC	Any	DC probe to point (A) Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	25.5MC	"	"	A3	"
3.	"	"	22MC	"	"	A4	"
4.	"	"	23MC	"	"	A5	"
5.	"	"	24.5MC	"	"	A6	"
6.	"	"	27.25MC	"	"	A7	Adjust for MINIMUM deflection.
7.	"	"	21.25MC	"	"	A8, A9	"

OVERALL VIDEO IF RESPONSE CHECK

Leave bias battery connected as under Video IF Alignment.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to ungrounded tube shield floating over dummy Conv. tube. Low side to chassis.	24MC (10MC Swp)	21.25MC 25.75MC 27.25MC	Any	Vert. amp. to point (A) Low side to chassis.		Check for response curve similar to fig. 1 If necessary adjust A1 through A6 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	.001MFD	High side to pin 8 (cathode) of 12AU7 (V7). Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (B) Common to chassis.	A10, A11, A12, A13	Adjust for maximum deflection.
10.	"	"	"	"	DC probe to point (C) Common to point (D)	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side to the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.001MFD	High side to pin 8 (cathode) of 12AU7 (V7). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp. to point (B). Low side to chassis.	A10, A11, A12, A13	Disconnect stabilizer capacitor C6. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
10.	"	"	"	"	"	Vert. amp. to point (C). Low side to chassis.	A14	Reconnect capacitor C6. Adjust so that 4.5MC occurs at center of crossover lines as in fig. 3. SLIGHTLY retouch A13 for maximum amplitude and straightness of crossover lines.

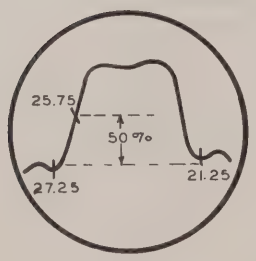


FIG. 1

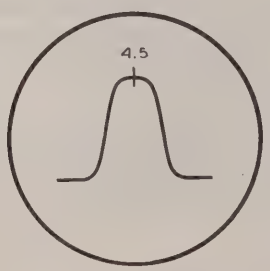


FIG. 2

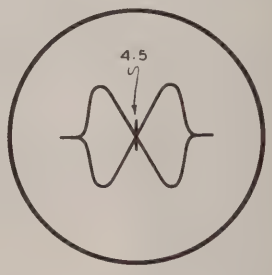


FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

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OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary.
If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A15. It should be noted that this is an all channel oscillator circuit adjustment and should not be used to correct any individual channel.
If adjustment of A15 will not bring all channels well within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency.
The channel adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. to point (A). Low side to chassis.	A16	Adjust to place sound marker in sound notch as in fig. 4. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A17	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A18	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A19	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A20	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A21	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A22	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A23	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A24	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A25	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A26	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A27	

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point (E). Low side to chassis.	A28, A29, A30	Adjust for response curve of maximum amplitude and symmetry similar to fig. 5.
13.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to fig. 5. If markers fall below 70% on any channel make compromise adjustments of A28, A29 and A30 with channel switch set to that channel, then recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

4.5MC TRAP ALIGNMENT

Tune in a TV station and observe the picture for evidence of 4.5MC interference. If present, retouch A10 slightly for minimum interference.

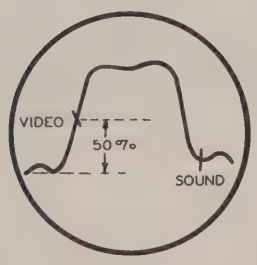


FIG.4

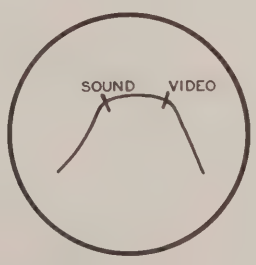
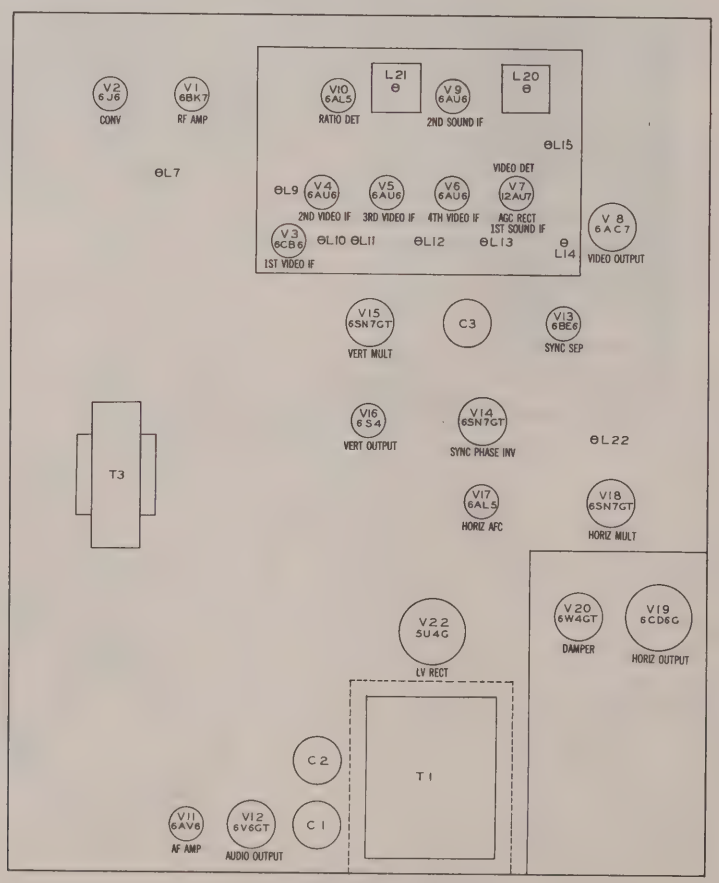


FIG.5

RESISTANCE MEASUREMENTS

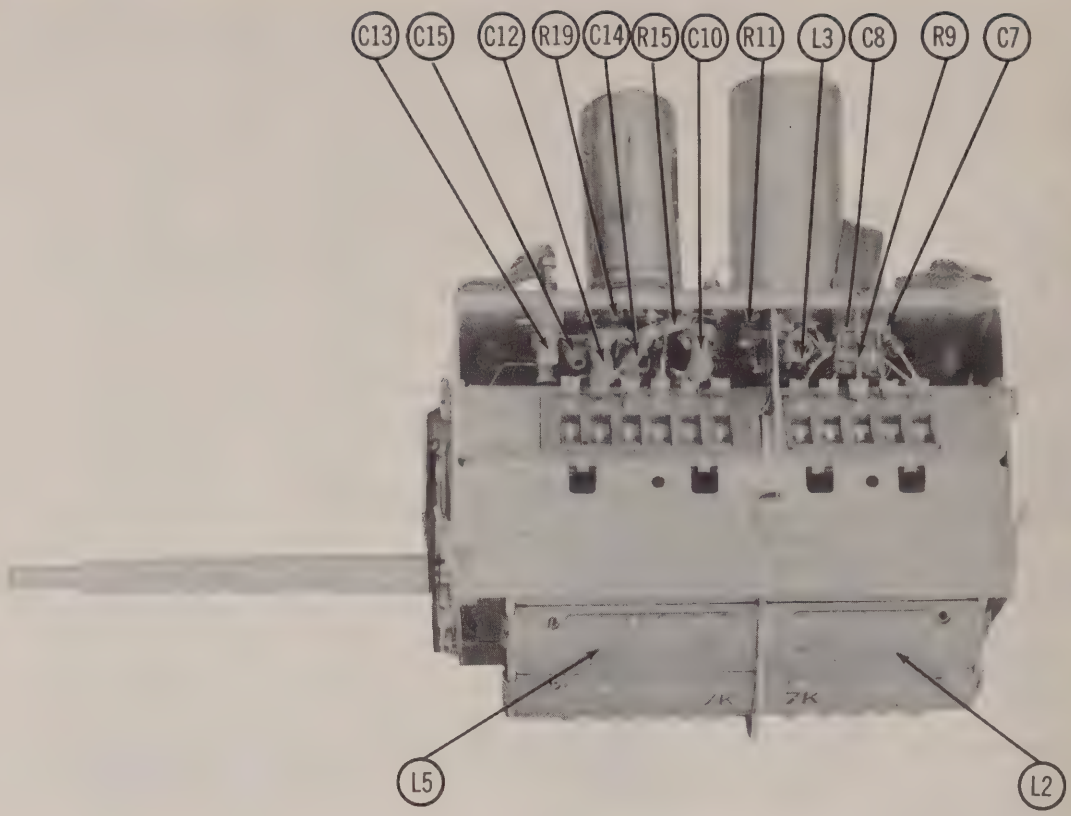
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	990KΩ	0Ω	.1Ω	0Ω	†2.1KΩ	110KΩ	INF	0Ω
V 2	6J6	†20KΩ	†25KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	945KΩ	51Ω	.1Ω	0Ω	†3.2KΩ	†3.2KΩ	0Ω		
V 4	6AU6	950KΩ	0Ω	.1Ω	0Ω	†3KΩ	†3KΩ	68Ω		
V 5	6AU6	950KΩ	0Ω	.1Ω	0Ω	†7.6KΩ	†2.8KΩ	68Ω		
V 6	6AU6	.7Ω	0Ω	.1Ω	0Ω	†8.3KΩ	†2.7KΩ	150Ω		
V 7	12AU7	†3.5KΩ	100KΩ	150Ω	.1Ω	.1Ω	470KΩ	5.7KΩ	.7Ω	0Ω
V 8	6AC7	0Ω	0Ω	0Ω	4.7KΩ	100Ω	†23KΩ	.1Ω	†5.8KΩ	
V 9	6AU6	470KΩ	0Ω	0Ω	.1Ω	†12KΩ	†12KΩ	0Ω		
V 10	6AL5	INF	INF	0Ω	.1Ω	0Ω	0Ω	20KΩ		
V 11	6AV6	10Meg	0Ω	.1Ω	0Ω	0Ω	0Ω	†220KΩ		
V 12	6V6GT	0Ω	0Ω	†2.6KΩ	†2.1KΩ	470KΩ	INF	.1Ω	270Ω	
V 13	6BE6	51KΩ	0Ω	.1Ω	0Ω	80KΩ	†41KΩ	2.7Meg		
V 14	6SN7GT	0Ω	0Ω	0Ω	2.2Meg	†5.8KΩ	6.6KΩ	.1Ω	0Ω	
V 15	6SN7GT	60KΩ	#335KΩ	1.8KΩ	380KΩ	#2Meg	1.8KΩ	.1Ω	0Ω	
V 16	6S4	INF	3KΩ	1 Meg	0Ω	.1Ω	1 Meg	3KΩ	INF	#3.8KΩ
V 17	6AL5	INF	INF	.1Ω	0Ω	47KΩ	0Ω	47KΩ		
V 18	6SN7GT	INF	†14KΩ	1.5KΩ	230KΩ	†190KΩ	1.5KΩ	.1Ω	0Ω	
V 19	6CD6G	INF	0Ω	300Ω	INF	470KΩ	INF	.1Ω	†18KΩ	TopCap #18Ω
V 20	6W4GT	INF	INF	9 Meg	INF	†80Ω	INF	#26Ω	#26Ω	
V 21	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								TopCap #468Ω
V 22	5U4G	INF	17KΩ	INF	34Ω	INF	32Ω	INF	17KΩ	
V 23	21EP4	0Ω	270KΩ	Pin 10 #180KΩ	Pin 11 †330KΩ	Pin 12 .1Ω				

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 8 OF V22
# MEASURED FROM PIN 3 OF V20

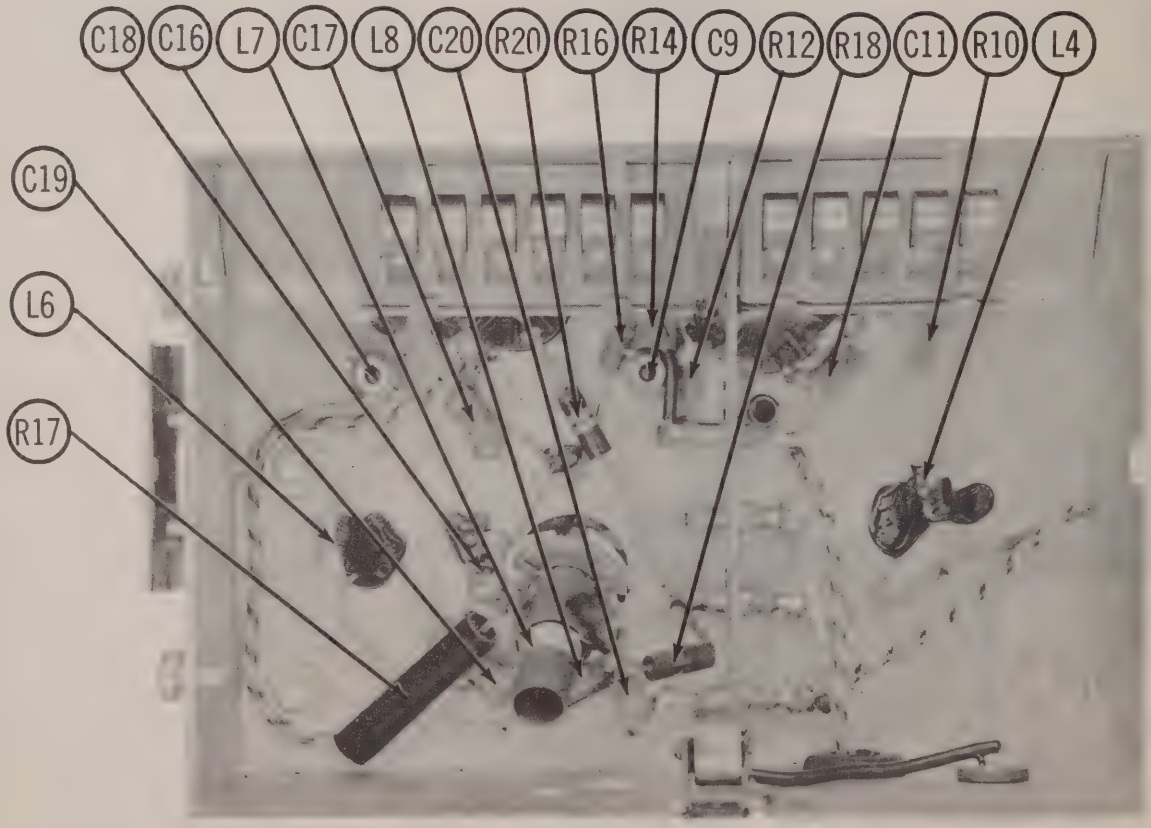


BOTTOM VIEW

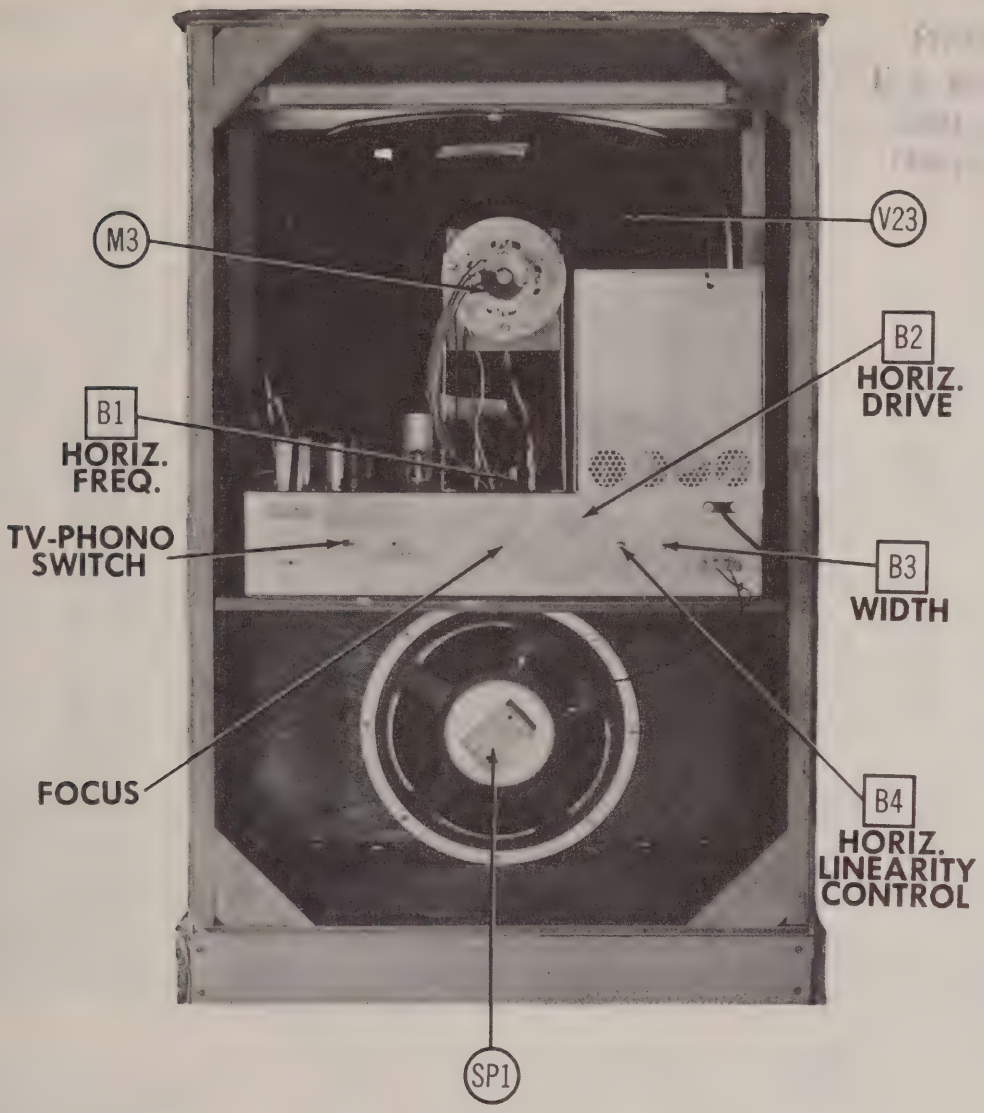
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug. (B1) until the picture synchronizes horizontally.

Turn the horizontal drive trimmer (B2) clockwise as far as possible without the presence of a vertical white line or compression of the center of the picture.

Adjust the width slug (B3) for a picture slightly wider than necessary tofill the picture mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove 5 push on type control knobs from front panel.
2. Remove 4 wood screws. Remove rear cover.
3. Disconnect speaker.
4. Remove 6 phillips head wood screws. Remove speaker.
5. Remove 4 chassis bolts. Remove chassis.

NOTE : FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6BK7	6BK7	9AJ	
B	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V6	4th. Video IF Amp.	6AU6	6AU6	7BK	
V7	Video Detector-AGC Rectifier-1st. Sound IF Amp.	12AU7	12AU7	9A	
V8	Video Output	6AC7	6AC7	8N	
V9	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V10	Ratio Detector	6AL5	6AL5	6BT	
V11	AF Amplifier	6AV6	6AV6	7BT	
V12	Audio Output	6V6GT	6V6GT	7AC	
V13	Sync Separator	6BE6	6BE6	7CH	
V14	Sync Phase Inv.	6SN7GT	6SN7GT	8BD	
V15	Vert. Mult.	6SN7GT	6SN7GT	8BD	
V16	Vert. Output	6S4	6S4	9AC	
V17	Horiz. AFC	6AL5	6AL5	6BT	
V18	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V19	Horiz. Output	6CD6G	6CD6G	5BT	
V20	Damper	6W4GT	6W4GT	4CG	
V21	HV Rectifier	1B3GT	1B3GT	3C	
V22	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RMA BASE TYPE	NOTES
V23A	21EP4	21EP4	12D	① Circuit changes necessary
B	21FP4 ①	21EP4A ①	12D	
		21FP4 ①	12C	
		21FP4A	12C	
C	24AP4		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CONRAC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	475		AFH2-72		UP4450		FP262	TVL-2830	
B	▲40	475								
C2A	▲20	450		AFH4-67		UP22245C		FP430.2	TVL-4763	Note 2
B	■20	450								
C	▲20	450								Note 3
D	30	25		AFH4-14		UPT222245		FP444	TVL-4763	
C3A	▲20	450								Note 1
B	30	450								
C	■20	450								
D	▲30	450								
C4	20	450		PRS450/20		BR2045A		TC75	TVA-1709	
C5	50	50		PRS50/50		BR505		TC39	TVA-1308	
C6	5	50		PRS150/4		BR550		TC30	TVA-1303	
C7	3-8				829-10					
C8	3.2				TCZ-2.2		NP0K-2R2		5TCCB-V22	
C9	.5-3				829-3			CT565A		
C10	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	Note 4
C11	1000			SII000	D6-102	TM5D1	GP2L-102	DC-521	5HK-D1	
C12	100			SII00	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C13	.5-3				829-3			CT565A		
C14	20			SI20NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2	
C15	10			SI0N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C16	.5-3				829-3			CT565A		
C17	1000			SII000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C18	40			SI0N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C19	73						N7501-730			
C20	200			SI200	D6-201	TM5T2	GP2L-201	UC-532	5GA-T2	Note 5
C21	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C22	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C23	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C24	75			SI75NP0	TCZ-75		N7501-750	ZT-5475	5TCC-Q75	
C25	330			SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C26	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C27	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C28	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C29	68				TCZ-68		NP0-333-680		5TCC-Q68	
C30	330			SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C31	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C32	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C33	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C34	330			SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C35	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C36	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C37	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C38	100	500		1469-0001		5R5T1		MCB235	MS-31	
C39	330			SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C40	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C41	56			SI56	D6-560		GP1K-560	UC-5456	5GA-Q56	
C42	.33	400		P488-22		PTK4P22		PT4025	4TM-P22	
C43	5.6						NP0K-5R6			
C44	500	500		1468-0005	D6-501	5W5T5	GP2K-501	MC245	1FM-35	
C45	56				TCZ-56		NP0-333-560			Note 6
C46	56				TCZ-56		NP0-333-560			
C47	.047	600		P688-047	DF-503	PTE6847		PT6147	6TM-S47	
C48	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C49	.02	600		P688-02	DF-203	PTE6S2		PT612	6TM-S2	
C50	56			SI56	D6-560		GP1K-560	UC-5456	5GA-Q56	
C51	5000				BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C52	1000				SII000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C53	5000				BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C54	5000				BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C55	330	500			SI330	D6-331		GP2K-331	UC-533	5GA-T33	
C56	4000				SI400 0	D6-402	TM5D4	GP2-333-402	UC-5240	5HK-D4	
C57	.022	400			P488-022	DF-203	PTE4S22		PT4122	4TM-S22	
C58	5000				BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C59	.01	600			P688-01	D6-103	PTE6S1	GP2-333-103	PT6li	6TM-S1	Note 7
C60	4000				SI4000	D6-402	TM5D4	GP2-333-402	UC-5240	5HK-D4	
C61	.006	600			P688-006		PTE6D6	GP2-333-602	PT626	6TM-D6	
C62	270	500			1469-0003	D6-271	5R5T3	GP2K-271	MCB241	MS-33	Note 8
C63	10000				BPD-01	DD-103	TM5S1		821-01	DC-511	5HK-S1
C64	.047	600			P688-047	DF-503	PTE6S47			PT6147	6TM-S47
C65A	.01				P688-01		PTE6S1	GP2-333-103	PT6li	6TM-S1	
B	.002				P688-002	♦PC-101	PTE6D2	GP2-333-202	PT622	6TM-D2	
C	.005				P688-005		PTE6D5	GP2-333-502	PT625	6TM-D5	
D	.005				P688-005		PTE6D5	GP2-333-502	PT625	6TM-D5	
C66	.01	600			P688-01	D6-103	PTE6S1	GP2-333-103	PT6li	6TM-S1	Note 11
C67	.006	600			P688-006		PTE6D6		PT626	6TM-D6	
C68	.25	600			684-25		PTE6P25		PT6025	6TM-P25	
C69	.047	600			P688-047		PTE6S47		PT6147	6TM-S47	
C70	.1	600			P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C71	500	500			1468-0005	D6-501	5W5T5	GP2K-501	MC245	1FM-35	
C72	500	500			1468-0005	D6-501		GP2K-501	MC245	1FM-35	
C73	7000	500			1467-007		ID3D7		MC469	1FM-27	Note 9
C74	2000	500			1467-002	D6-202	1W5D2	GP2-333-202	MC457	1FM-22	Note 12
C75	2000	500			1467-002	D6-202	1W5D2	GP2-333-202	MC457	1FM-22	Note 12
C76	5000				BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C77	.047	600			P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C78	6800	500							MCB469	MS-27	Note 10
C79	270	500			1469-0003		5R5T3		MCB241	MS-33	
C80	47	1000			1468L-HV-00005				MCL447		
C81	.01	600			P688-01		PTE6S1		PT6li	6TM-S1	
C82	.5	200			P288-5		PJ2P5		PT405	2TM-P5	
C83	.1	600			P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C84	.047	600			P688-047		PTE6S47		PT6147	6TM-S47	
C85	.047	600			P688-047		PTE6S47		PT6147	6TM-S47	
C86	.1	600			P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C87	500	20000			HV20C	TV3-502	MM-C20T5	413-501		20DK-T5	
C88	.022	600					PJ6S25		PT6122	6TM-S22	
C89	.022	600					PJ6S25		PT6122	6TM-S22	

Note 1. Not used in all Models.
Note 2. Some models use 40MFD in this application.
Note 3. Some Models use 25MFD in this application.
Note 4. Some Models use 120MMF in this application.
Note 5. Some Models use 270MMF in this application.
Note 6. Some Models use 47MMF in this application.
Note 7. Some Models use .02MFD in this application.
Note 8. Some Models use 220MMF in this application.
Note 9. Some Models use .006MFD in this application.
Note 10. Some Models use 6000MMF in this application.
♦ Items C65A, C65B, C65C, C65D, R78A, R78B, R78C, R78D are combined in one unit.
Note 11. Sets with serial no. above 3387 use .015MFD in this application.
Note 12. Sets with serial no. above 3387 use .01MFD in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	274-R30	Q13-133	AG-80-Z	B-80-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A
R2A	500KΩ	½	460-R18	Q11-133	AG-58-S	B-59	U-50	Brightness
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R2A
R3A	100KΩ	½	460-R54	Q11-128	AG-49-S	AB-40	SU-41	Horiz. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R3A
R4A	2 Meg	½	460-R510	Q11-139	AG-83-S	AB-75	SU-56	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	3000Ω	2	460-R71	WK-300	A43-3000	VK-133	R3000L	Vert. Linearity-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	250KΩ	½	460-R60	Q11-130	AG-55-S	AB-50	SU-46	Vert. Hold
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	1000Ω	½	460-R401	Q11-108	AG-8-S	B-5	U-4	Contrast
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R7A
R8A	3000Ω	4	460-R305		A10-3000	W3MP	M3MP	Focus-Wire Wound-Note
B	Shaft		Not Req.		FKS-1/4	Not Req.	Not Req.	Attach to R8A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R9	22KΩ	½			
R10	47KΩ	½			
R11	220KΩ	½			
R12	180KΩ	½		BTS-180K	Note 1
R13	100KΩ	½			
R14	1000Ω	½		BTS-1000	Note 2
R15	4700Ω	½		BTS-4700	
R16	220KΩ	½			
R17	10Ω	½			Note 2
R18	15KΩ	½		BTS-15K	
R19	10KΩ	½		BTS-10K	
R20	10KΩ	½		BTS-10K	
R21	3300Ω	½		BTS-3300	
R22	51Ω-5%	½			
R23	150Ω	½		BTS-150	
R24	1000Ω	½		BTS-1000	
R25	10K-5%	½			
R26	68Ω	½			
R27	150Ω	½		BTS-150	
R28	1000Ω	½		BTS-1000	
R29	3900Ω	½		BTS-3900	
R30	10KΩ-5%	½			
R31	68Ω	½			
R32	4700Ω-5%	½		BTS-4700-5%	
R33	150Ω	½		BTS-150	
R34	1000Ω	½		BTS-1000	
R35	150Ω	½		BTS-150	
R36	5600Ω-5%	1		BTA-5600-5%	
R37	150Ω	½		BTS-150	
R38	470KΩ	½		BTS-470K	
R39	470KΩ	½		BTS-470K	
R40	1000Ω	½		BTS-1000	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R41	820Ω	½		BTS-820	
R42	22KΩ	▲1		BTA-22K	
R43	4700Ω	2		BTB-4700	
R44	22KΩ	½		BTS-22 K	
R45	330KΩ	½		BTS-330K	
R46	470KΩ	½		BTS-470K	
R47	470KΩ	½		BTS-470K	Note 3
R48	100KΩ	½		BTS-100K	
R49	470KΩ	½		BTS-470K	Note 2
R50	100KΩ	½			
R51	150Ω	½		BTS-150	
R52	1000Ω	½		BTS-1000	
R53	4700Ω-5%	½		BTS-4700-5%	
R54	470KΩ	½			
R55	22KΩ	½		BTS-22K	
R56	15KΩ	½		BTA-15K	
R57	270Ω	½		BTS-270	
R58	22KΩ	½		BTS-22K	
R59	10KΩ	½		BTS-10K	
R60	10KΩ	½		BTS-10K	
R61	10Meg	½		BTS-10Meg	
R62	220KΩ	½		BTS-220K	
R63	2.2Meg	½		BTS-2.2Meg	Note 2
R64	470KΩ	½		BTS-470K	
R65	270Ω	½		BTS-270	
R66	1000Ω	2		BTB-1000	
R67	470KΩ	½		BTS-470K	
R68	2.2Meg	½		BTS-2.2Meg	
R69	47KΩ	½		BTS-47K	
R70	1 Meg	½		BTS-1 Meg	
R71	390KΩ	½		BTS-390K	
R72	39KΩ	½		BTS-39K	
R73	100KΩ	½		BTS-100K	
R74	2.2Meg	½		BTS-2.2Meg	
R75	3900Ω	½		BTS-3900	
R76	2700Ω	½		BTS-2700	
R77	4700Ω	½		BTS-4700	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R78A	22KΩ	1		BTS-22K	
B	22KΩ	1	♦	BTS-22K	
C	8200Ω	1		BTS-8200	
D	8200Ω	1		BTS-8200	
R79	250KΩ	1			
R80	1800Ω	½		BTS-1800	
R81	220KΩ	½		BTS-220K	
R82	1.2Meg	½		BTS-1.2Meg	Note 4
R83	15KΩ	½		BTS-15K	
R84	1 Meg	½		BTS-1 Meg	
R85	2200Ω	1		BTA-2200	
R86	82KΩ	½		BTS-82K	
R87	100KΩ	½		BTS-100K	
R88	100KΩ	½		BTS-100K	
R89	470KΩ	½		BTS-470K	
R90	47KΩ	½		BTS-47K	
R91	47KΩ	½		BTS-47K	
R92	15KΩ	½		BTS-15K	
R93	4700Ω-5%	½		BTS-4700-5%	
R94	1500Ω-5%	½		BTS-1500-5%	
R95	180KΩ	½		BTS-180K	
R96	160KΩ	½		BTS-1 80K	
R97	10KΩ	1		BTA-10K	
R98	4700Ω-5%	1		BTS-4700-5%	
R99	150Ω	½			
R100	470KΩ	½		BTS-470K	
R101	300Ω	10		1 3/4A-300	
R102	18KΩ	3		1 3/4A-18K	
R103	2200Ω	2		BTB-2200	
R104	3.9Ω	½			
R105	82KΩ	½			Note 2
R106	82KΩ	½			Note 5
R107	33KΩ	1		BTA-33K	
R108	1500Ω	10		1 3/4A-1500	
R109	1500Ω	10		1 3/4A-1500	
R110	470Ω	1		BTA-470	
R111	100KΩ	½		BTS-100K	
R112	10Ω	½			Note 6
R113	6800Ω	1		BTA-6800	Note 2

Note 1 Some models use a 220KΩ resistor in this application.
Note 2 Not used in all models.
Note 3 Some models use a 330KΩ resistor in this application.
Note 4 Some models use a 2.2meg resistor in this application.
Note 5 Some models use two 82KΩ resistors in series in this application.
Note 6 Special wire Wound resistor. Replace only with exact duplicate.
♦ Items R78A, R78B, R78C, R78D, C65A, C65B, C65C, C65D are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.
T1	117VAC ② 2A	700VCT .230ADC	5VAC ③ 3A	6.3VAC ④ 1.2A		P-8169 ①	P-3070	TP-356	R-38BC
				SEC 4 6.3VAC ④ 10A					

① Parallel two larger 6.3V. windings and use for secondary No. 4.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.	NOTES
T2	505.3Ω Tap ② 5Ω, 9Ω, 11.3Ω, 35.3Ω, 37.3Ω, 55.3Ω	0Ω			HVO-9			Horiz. Output Trans.
T3	1675Ω Tap. ② 5Ω,			A-8141	A-3039		A-104X	Vert. Output Trans.
R4A	35Ω				MDF-71	TY-6	Y-19	Horiz. Deflection Coils
B	45Ω							Vert. Deflection Coils
K①	1200Ω							EM-PM Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: TRIAD PART No.	NOTES
T6	7.8KΩ	3.75Ω	580Ω	.44Ω	2073	A-8114 ①	A-3020 ①		S-8X ①	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: CONRAC PART No.	REPLACEMENT DATA: VIKING PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	12"	PM	3.75Ω	12S	12711	12A31	

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	CONRAC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.230A	72Ω	3.85HY			C-2991		C-15X

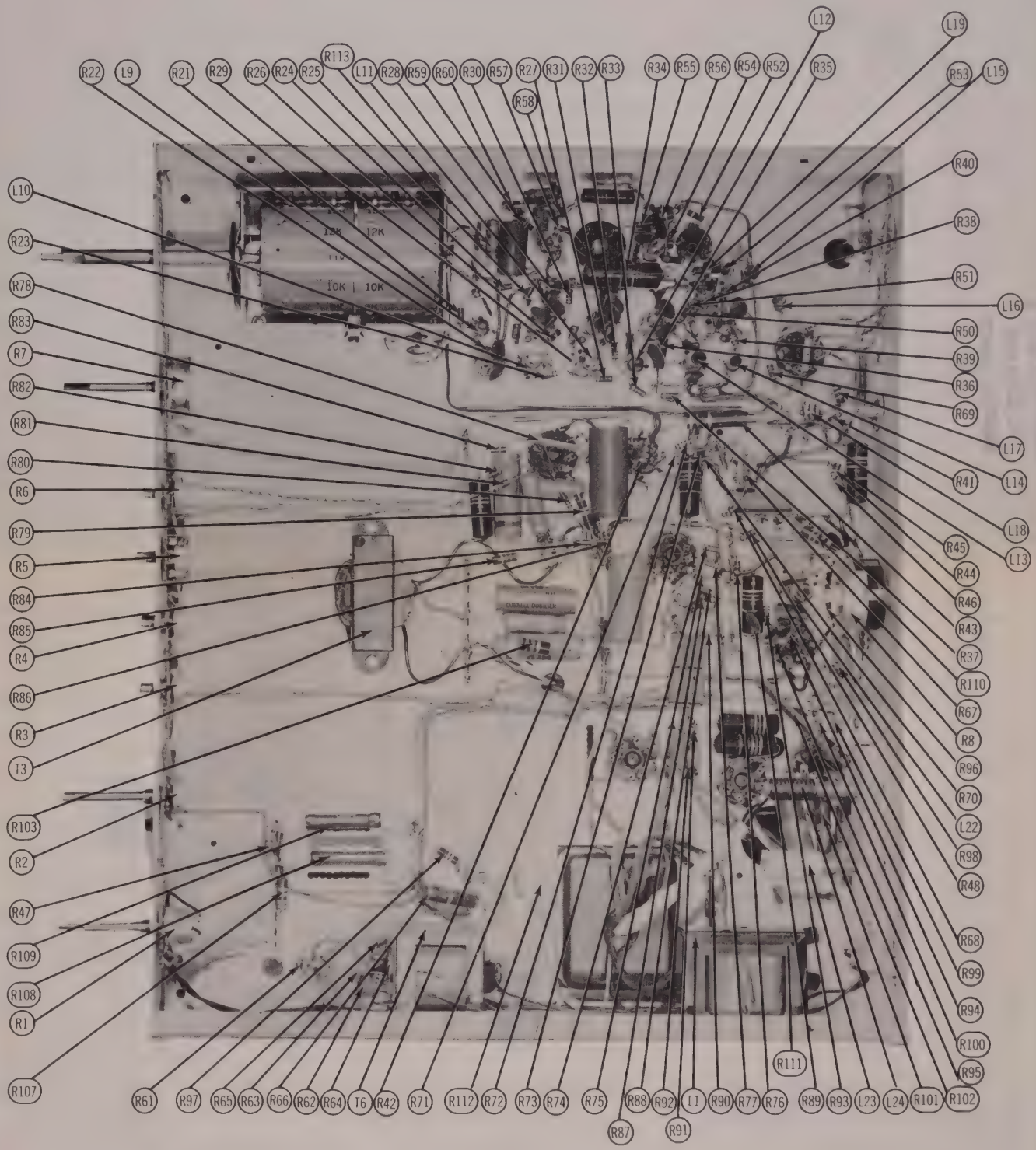
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	CONRAC PART No.	MERIT PART No.	
L2	Ant. Coils	0Ω				
L3	Neutralizing Coil	0Ω				
L4	Fil. Choke	0Ω				
L5	RF, Mixer Grid & Osc. Coils	0Ω				
L6	Fil. Choke	0Ω				
L7	Conv. Plate	.4Ω			TV-103	
L8	RF Choke	.4Ω				
L9	1st. Video IF	.4Ω			TV-103	
L10	2nd. Video IF	.2Ω				Includes Trap
L11	3rd. Video IF	.4Ω				Includes Trap
L12	4th. Video IF	.7Ω			TV-103	
L13	Cathode Trap	.1Ω			TV-150 *	
L14	5th. Video IF	.7Ω			TV-102	
L15	4.5MC Trap	1.2Ω			TV-151	
L16	Series Peaking Coil	10.5Ω			TV-184 ■	150 Microhenries, wound on 10KΩ resistor
L17	Series Peaking Coil	13Ω			TV-185 ‡	215 Microhenries, wound on 18KΩ resistor
L18	Shunt Peaking Coil	20Ω			TV-188	450 Microhenries
L19	RF Choke	11Ω			TV-185	250 Microhenries
L20	Sound IF	.8Ω	1.9Ω		TV-108	
L21	Ratio Det.	4.6Ω	.2ΩCT		TV-110 ▲	Tertiary Winding - 1Ω
L22	Horiz. Osc.	35Ω			TV-163	
L23	Width Coil	12Ω			MWC-1	
L24	Horiz. Lin.	8Ω				

* Includes capacitor
■ Parallel with 10KΩ resistor
‡ Parallel with 18KΩ resistor
▲ Drill new mtg. holes

MISCELLANEOUS

ITEM No.	PART NAME	CONRAC PART No.	NOTES
M1	RF Tuner	2005	
M2	Switch	4603	TV-Phono
M3	Ion Trap		
B2	Trimmer		Horiz. Drive



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PROPERTY OF
L. F. [illegible]
3824 MEADE ST.
DENVER, COLORADO

DUKANE
MODELS 1B325, 1U325

DUKANE
MODELS 1B325, 1U325

DUKANE MODEL 1U325

TRADE NAME	DuKane Models 1B325, 1U325
MANUFACTURER	DuKane Corp., St. Charles, Ill.
TYPE SET	AC Operated 3 Channel Audio Amplifier
TUBES (SEVEN)	Types (2) 5879 Mic. Pre-Amp., 5879 Mixer, 6SN7GT AF Amp.-Phase Inv., (2) 6L6G Audio Output, 5U4G Rectifier
POWER SUPPLY	110-120 Volts - 50/60 Cycles RATING 1.3 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

DUKANE
MODEL IU325

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		DUKANE PART No.	STANDARD REPLACEMENT		
V1	Mic. Pre-Amp.	262-5879	5879	9AD	
V2	Mic. Pre-Amp.	262-5879	5879	9AD	
V3	Mixer	262-5879	5879	9AD	
V4	AF Amplifier-Phase Inverter	262-6SN7GT	6SN7GT	8BD	
V5	Audio Output	262-6L6G	6L6G	7AC	
V6	Audio Output	262-6L6G	6L6G	7AC	
V7	Rectifier	262-5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	DUKANE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▲20	500	199-2914	AFH2-69		UP2250			TVL-1820	
B	▲20	500								
C2A	■10	450	199-2902	AFH2-47		UPT1145		FP231	TVL-2750	
B	▲10	450								
C3A	■10	450	199-2902	AFH2-47		UPT1145		FP231	TVL-2750	
B	▲10	450								
C4	20	25	199-2001-206	PRS25/25		BR202A		TC26	TVA-1205	
C5	20	150	199-2016-206	PRS150/20		BR2015A		TC45	TVA-1410	
C6	.006	600	199-4030-602	P688-006	D6-602	PTE6D6	GP2-333-602	PT626	6TM-D6	
C7	.1	400	199-4021-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C8	.01	400	199-4020-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C9	.006	600	199-4030-602	P688-006	D6-602	PTE6D6	GP2L-102	PT626	6TM-D6	
C10	.1	400	199-4021-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C11	.01	400	199-4020-103	P488-01	D6-103	PTE4S1	GP2-333-602	PT411	4TM-S1	
C12	.1	400	199-4021-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C13	.1	400	199-4021-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C14	.002	600	199-4020-202	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C15	250	500	199-3001-251	1468-00025	D6-251	5W5T25	GP2K-251	MC240	1FM-325	
C16	.01	400	199-4020-103	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C17	.005	400	199-4020-502	P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C18	.1	400	199-4021-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C19	.1	400	199-4021-104	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C20	.25	400	199-4022-254	P488-25		PTE4P25		PT4025	4TM-P25	

CONTROLS

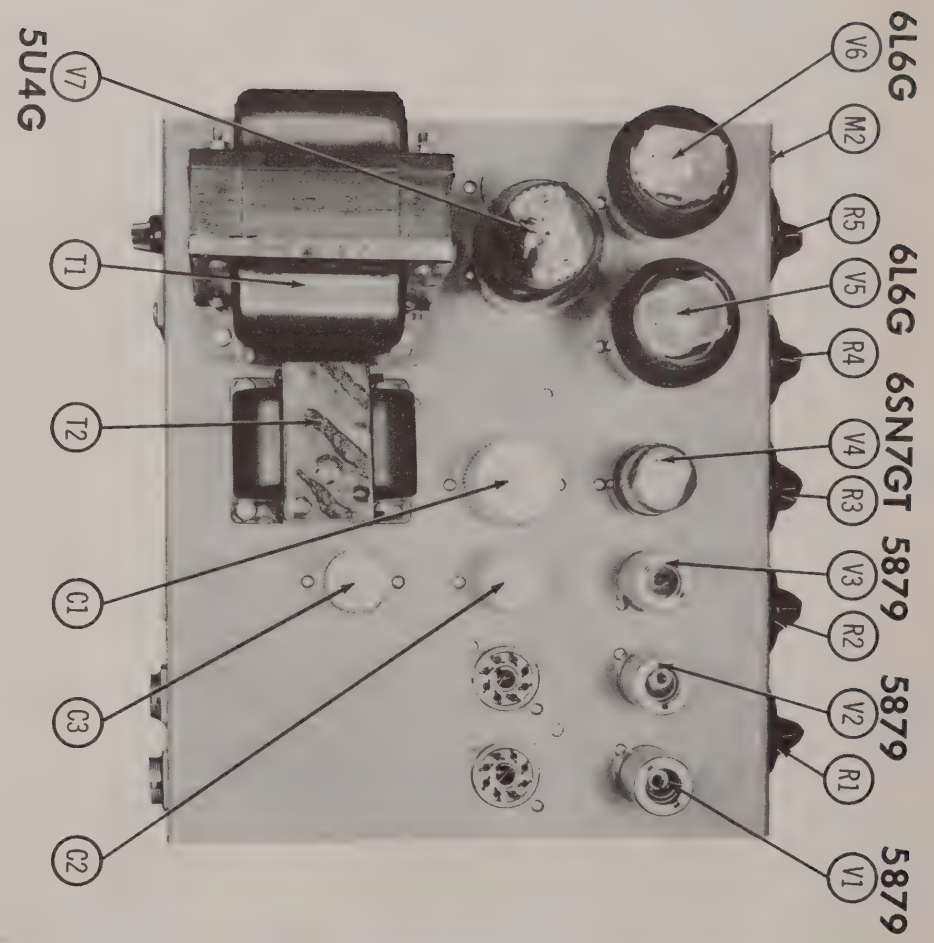
ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	DUKANE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	500KΩ	½	601-3289	Q13-133	AM-60-Z	B-60	U-48	Mike 1 Volume
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R1A
R2A	500KΩ	½	601-3289	Q13-133	AM-60-Z	B-60	U-48	Mike 2 Volume
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R2A
R3A	2.5Meg	½	601-3589	Q13-140	AM-67-Z	B-85	U-57	Aux. Volume
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R3A
R4A	500KΩ	½	601-3289	Q13-133	AM-60-Z	B-60	U-48	Bass
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R4A
R5A	2.5Meg	½	601-3589	Q13-140	AM-67-Z	B-85	U-57	Treble
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R5A

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DUKANE PART No.	IRC PART No.	
R6	47KΩ	½	600-0043-473	BTS-47K	
R7	10Meg	½	600-0043-106	BTS-10Meg	
R8	47KΩ	½	600-0043-473	BTS-47K	
R9	1.5Meg	1	600-0116-155	BTA-1.5Meg	
R10	270KΩ	1	600-0116-274	BTA-270K	
R11	47KΩ	½	600-0043-473	BTS-47K	
R12	47KΩ	½	600-0043-473	BTS-47K	
R13	10Meg	½	600-0043-106	BTS-10Meg	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DUKANE PART No.	IRC PART No.	
R14	1.5Meg	1	600-0116-155	BTA-1.5Meg	
R15	270KΩ	1	600-0116-274	BTA-270K	
R16	470KΩ	1	600-0116-474	BTA-470K	
R17	470KΩ	1	600-0116-474	BTA-470K	
R18	470KΩ	1	600-0116-474	BTA-470K	
R19	560Ω	1	600-0116-561	BTA-560	
R20	270KΩ	1	600-0116-274	BTA-270K	
R21	68KΩ	1	600-0116-683	BTA-68K	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DUKANE PART No.	IRC PART No.	
R22	270KΩ	1	600-0116-274	BTA-270K	
R23	27KΩ	1	600-0116-273	BTA-27K	
R24	10KΩ	1	600-0116-103	BTA-10K	
R25	470KΩ	1	600-0116-474	BTA-470K	
R26	1000Ω	1	600-0116-102	BTA-1000	
R27	1000Ω	1	600-0116-102	BTA-1000	
R28	56KΩ	1	600-0116-563	BTA-56K	
R29	56KΩ	1	600-0116-563	BTA-56K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DUKANE PART No.	IRC PART No.	
R30	5600Ω	1	600-0116-562	BTA-5600	
R31	100KΩ	1	600-0116-104	BTA-100K	
R32	10KΩ	1	600-0116-103	BTA-10K	
R33	100KΩ	1	600-0116-104	BTA-100K	
R34	165Ω	10	600-9001		
R35	10KΩ	25	600-1018-103	$4\frac{1}{2}$E-10K	
R36	2000Ω	25	600-1018-202	$4\frac{1}{2}$E-2000	
R37	10KΩ	1	600-0116-103	BTA-10K	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	DUKANE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ 1.3A	800VCT .175ADC	5VAC @ 3A	6.3VAC @ 2.7A	710-4042	DC-8412	P-3155		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		DUKANE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	8.3KΩ CT	70Volt Line SEC 2 8ΩTap @ 4Ω	372Ω CT	22.5Ω SEC 2 .67Ω Tap @ .52Ω	710-2017-02 710-2107 ①					① Alternate Audio output transformer.

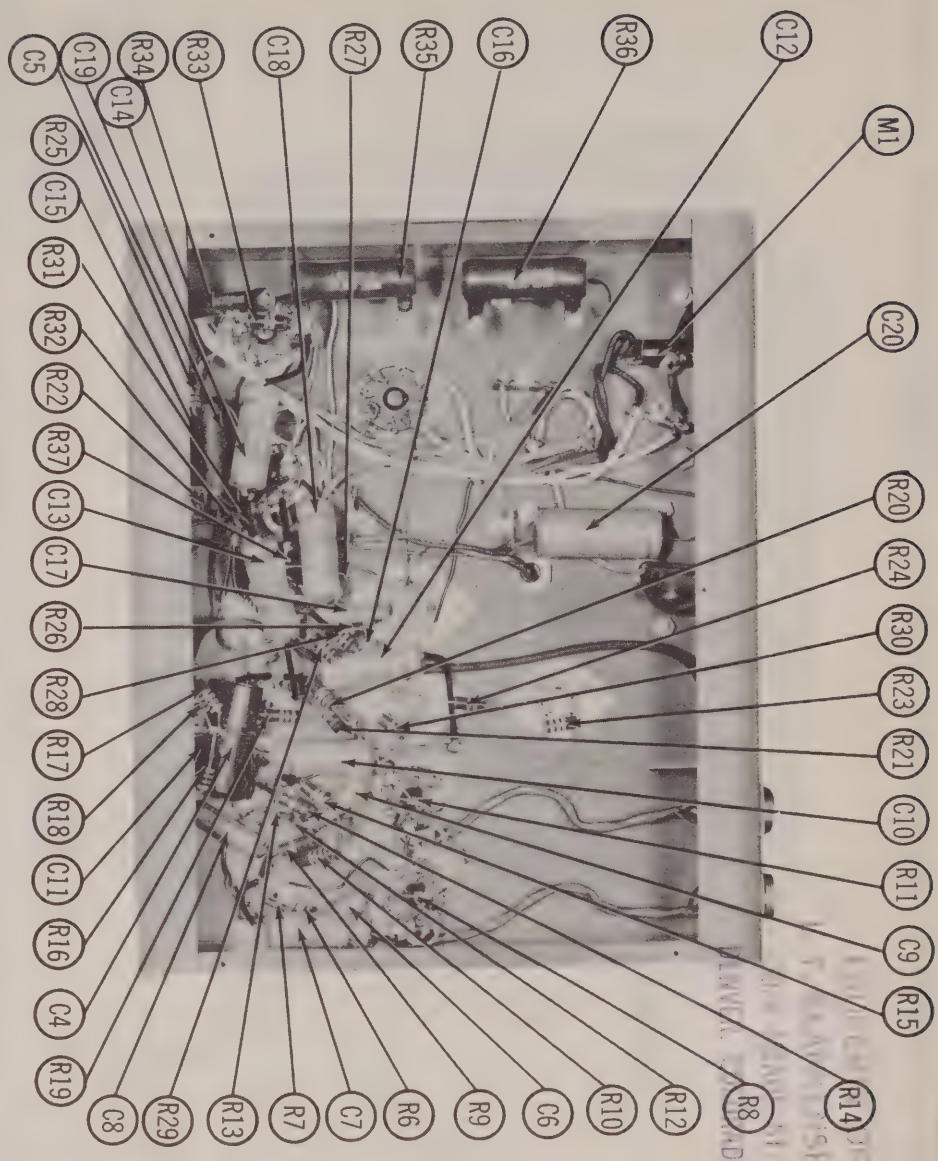
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			DUKANE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	3A 125V.	320-835-0300		313003	342001	MDL-3	HKP

MISCELLANEOUS

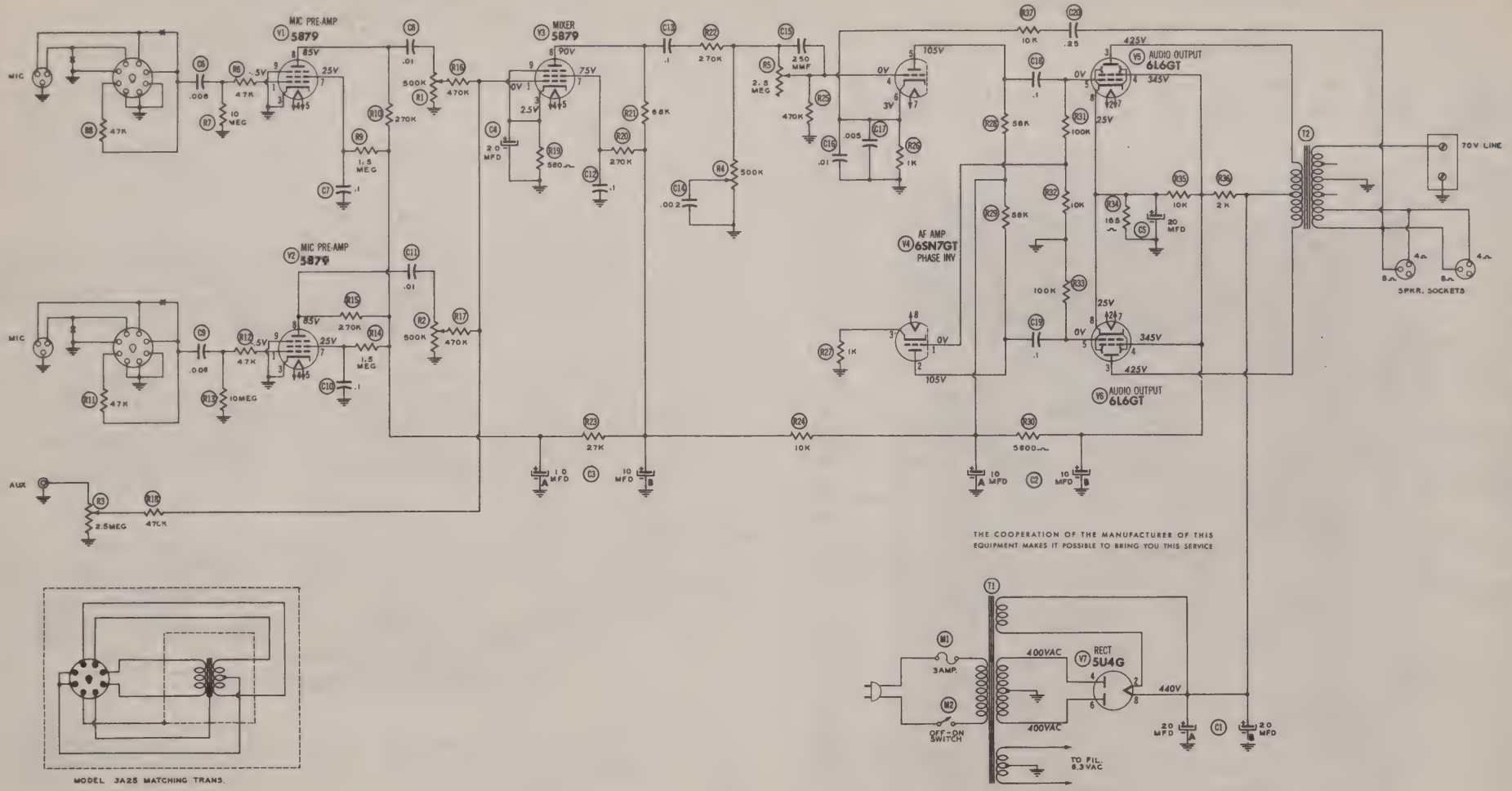
ITEM No.	PART NAME	DUKANE PART No.	NOTES
M2	Switch	680-74	On/off

CHASSIS—BOTTOM VIEW



DUKANE MODEL IU 325

DUKANE MODEL IU325



MODEL 3A2S MATCHING TRANS.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	587 9	10Meg	10Meg	0Ω	.1Ω	.1Ω	0Ω	†1.5Meg	†315KΩ	0Ω
V 2	5879	10Meg	10Meg	0Ω	.1Ω	.1Ω	0Ω	†1.5KΩ	†315KΩ	0Ω
V 3	5879	160KΩ	0Ω	560Ω	.1Ω	.1Ω	0Ω	†280KΩ	†85KΩ	560Ω
V 4	6SN7GT	10KΩ	†63KΩ	1KΩ	250KΩ	†63KΩ	1KΩ	.1Ω	.1Ω	
V 5	6L6G	0Ω	.1Ω	†186Ω	†2KΩ	110KΩ	10KΩ	.1Ω	165Ω	
V 6	6L6G	0Ω	.1Ω	†186Ω	†2KΩ	100KΩ	165Ω	.1Ω	165Ω	
V 7	5U4G	INF	12KΩ	INF	53Ω	INF	49Ω	INF	12KΩ	

† MEASURED FROM PIN 2 OF V7

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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185-6

1 - DC Voltage measurements are at 20,000 ohms per volt, AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - All controls at minimum, proper output load connected.

FIRESTONE
MODEL 4-C-21 (Code 120-2-C51-U)

FIRESTONE
MODEL 4-C-21 (Code 120-2-C51-U)

TRADE NAME	Firestone Model 4-C-21 (Code 120-2-C51-U)
SUPPLIER	Firestone Tire & Rubber Co., 1200 Firestone Pkwy.,Akron, Ohio
TYPE SET	Three Power Portable AM Superheterodyne Receiver
TUBES (Five)	Types 1U4 (or) 1T4 RF Amp., 1R5 Conv., 1U4 or 1T4 IF Amp., 1U5 Det.-AVC-AF Amp., 3V4 Audio Output
POWER SUPPLY	110-120 Volts AC/DC (or) 9 Volts "A" Supply & 90 Volts "B" Supply
RATING	50 MA @ 9 volts DC & 17 MA @ 90 Volts DC
TUNING RANGE—BROADCAST	538-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use battery power, if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1MFD capacitor in series with low side of the signal generator and B-.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (grid) of 1R5 (V2) Low side to B-.	455 KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2 A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200MMF to reduce hum modulation.
2.	"	High side to pin 6 (grid) of 1T4 (V1). Low side to B-.	1620 KC	"	"	A5	Adjust for maximum output. If unable to reach maximum, set A5 to middle of range, and adjust trimmer at other end of capacitor section.
3.	"	"	1400 KC	Tune to 1400 KC signal	"	A6	"
4.	"	"	600 KC	Tune to 600 KC signal	"	A7	"
5.		Loop	1400 KC	Tune to 1400 KC signal	"	A8	Fashion loop of several turns of wire and radiate signal into loop fof receiver . Adjust for maximum output.

Turn tuning gang to mechanical center of its range and set pointer to point straight down to base of cabinet.

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PARTS LIST AND DESCRIPTIONS

FIRESTONR
FIRESTONE
MODEL 4-C-21 (Code 120-2-C51-U)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: FIRESTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	1U4	1U4	6AR	
B	RF Amplifier	1T4	1T4	6AR	
V2	Converter	1R5	1R5	7AT	
V3A	IF Amplifier	1U4	1U4	6AR	
B	IF Amplifier	1T4	1T4	6AR	
V4	Det.-AVC-AF Amp.	1U5	1U5	6BW	
V5	Audio Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: FIRESTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲50	150	CE-36-U	AFH4-23		UP44215-x20		FP408		
B	■30	150								
C	▲25	150								
D	200	10								
C2	10	50	C205	PRS50/10		BR105		TC32	TVA-1304	
C3	.1	400	C208	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C4	12		CC120	SI12	D6-120		GP1K-120	UC-5412	5GA-Q12	
C5	.05	200	C207	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C6	.05	200	C207	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C7	100		CC200	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C8	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C9	100		CC200	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C10	.002	600	C203	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C11	100		CC200	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C12	220		CC221	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C13A	50			SI50		TM5Q5		UC-545	5GA-Q5	
B	5000			BPD-005	♦PC-90	TM5D5	♦1407-01	DC-525	5HK-D5	
C	2000			BPD-002		TM5D2		DC-522	5HK-D2	
C14	.002	400	C203	P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C15	.05	600	C204	P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C16	.1	400	C14L	P488-1		PTE4P1		PT401	4TM-P1	Note 1

Note 1. Mfgrs. unit includes series coil. When replacing, rewind coil on new unit exactly like original.

♦ Items C13A, C13B, C13C, R8A, R8B, R8C are combined in one unit.

CONTROLS

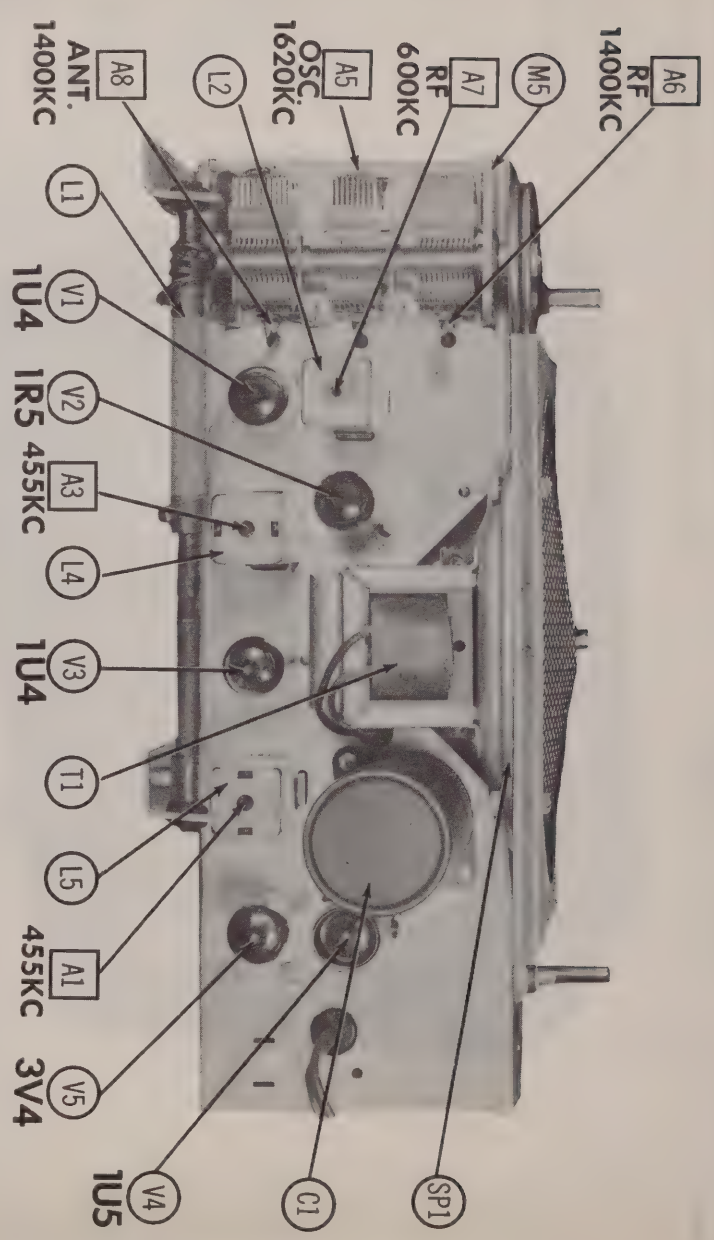
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FIRESTONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1Meg	½	RV44-C	Q13-137	AG-63-Z	B-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-2	SWB-2	Not Req.	US-27	Attach to R1A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: FIRESTONE PART No.	IRC PART No.	NOTES
R2	1Meg	½	R309	BTS-1Meg	
R3	150KΩ	½	R315	BTS-150K	
R4	10Meg	½	R311	BTS-10Meg	
R5	2Meg	½	R310		
R6	10KΩ	½	R316	BTS-10K	
R7	10Meg	½	R311	BTS-10Meg	
R8A	4.7Meg	½	♦YA-002-001	BTS-4.7Meg	
B	1Meg	½		BTS-1Meg	
C	2.2Meg	½		BTS-2.2Meg	
R9	5Meg	½	R505		
R10	820Ω	½	R317	BTS-820	
R11	820Ω	½	R317	BTS-820	
R12	100Ω	2	R318		
R13	2025Ω	10	R319	1 3/4A-2000	
R14	750Ω	1	R320		
R15	1000Ω	½	R321	BTS-1000	
R16	1500Ω	½	R314	BTS-1500	
R17	820Ω	½	R317	BTS-820	
R18	220KΩ	½	R322	BTS-220K	

♦ Items R8A, R8B, R8C, C13A, C13B, C13C are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		FIRESTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	8.7KΩ	3.4Ω	540Ω	.62Ω	Part of Spkr.	A-3329 ①	A-2927 ①	RO-16	S-11X	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	FIRESTONE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.4Ω	PM-350-B	ST-105 Mod. P5-X	5A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	FIRESTONE PART No.	MERIT PART No.	
L1	Loop Ant.	.1Ω		L-A51		
L2	RF Coil	100Ω	8.5Ω	57FB-4		
L3	Osc. Coil	2Ω	9Ω	L-051		
L4	Input IF	19Ω	19Ω	1655-16	BC-352	
L5	Output IF	19Ω	19Ω	1655-16	BC-353	

SELENIUM RECTIFIER

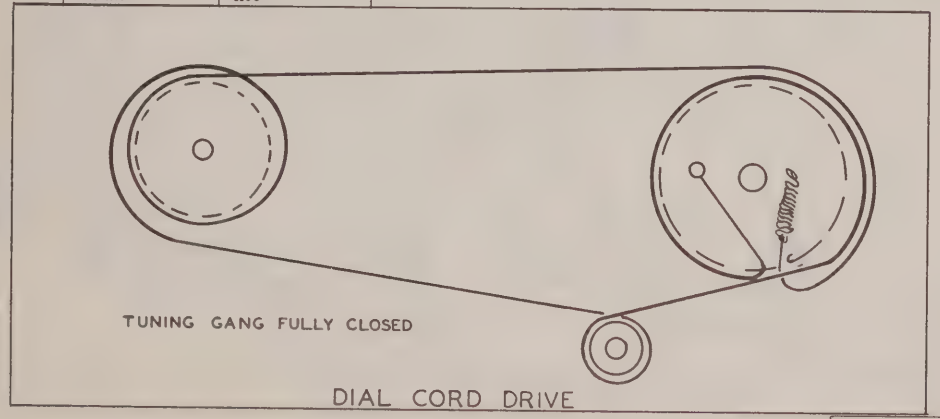
ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT	FIRESTONE PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	
M1	.070 A		NB-5	5M4	1003A	6S75	

BATTERIES

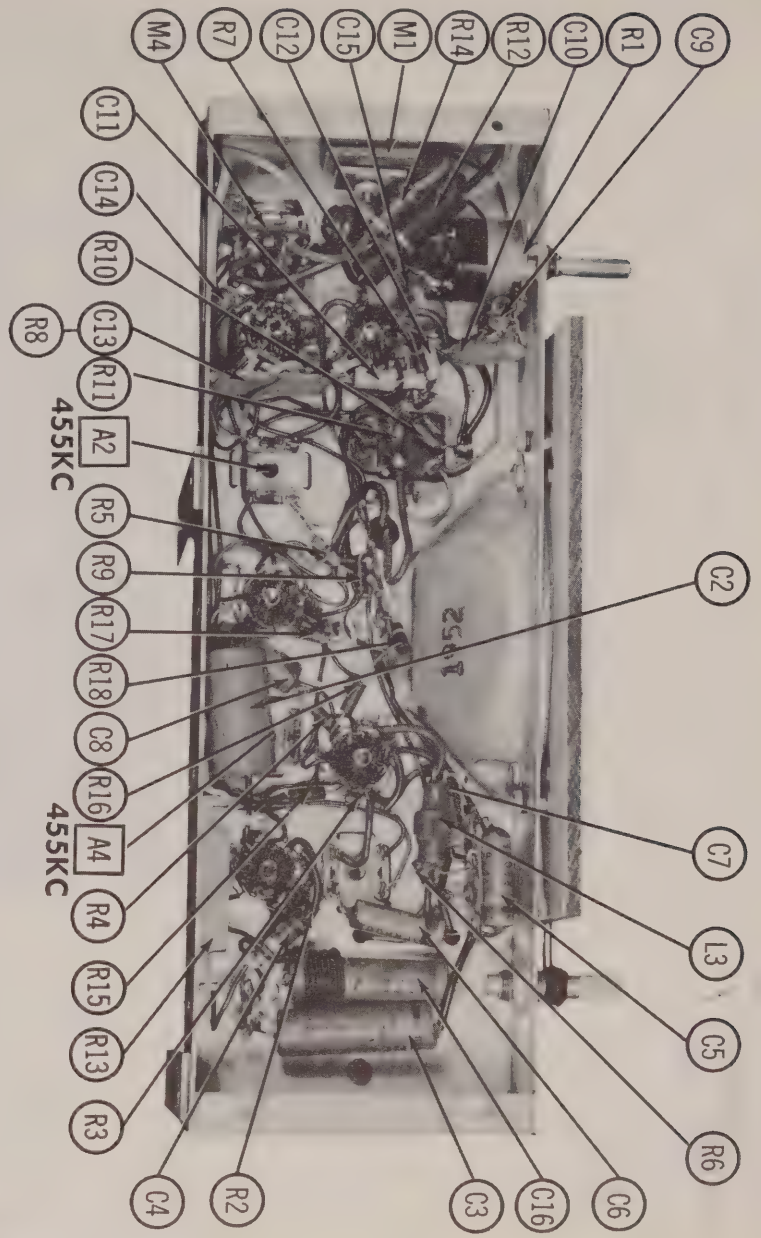
ITEM No.	VOLTAGE	FIRESTONE PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2	4.5 V.	4-D-86	746			F3			2 used in series
M3	45V.	4-D-89		482			M30		2 used in series

MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M4	Switch	SW-51U	Power Change-over
M5	3Gang Var. Cap.	CV-300	(37-417MMF, 18-395MMF, 30-207MMF)
	Cabinet	H53	Less Back
	Cabinet Back	H54	
	Knob	H51	
	Dial	H55	
	Pointer	H56	

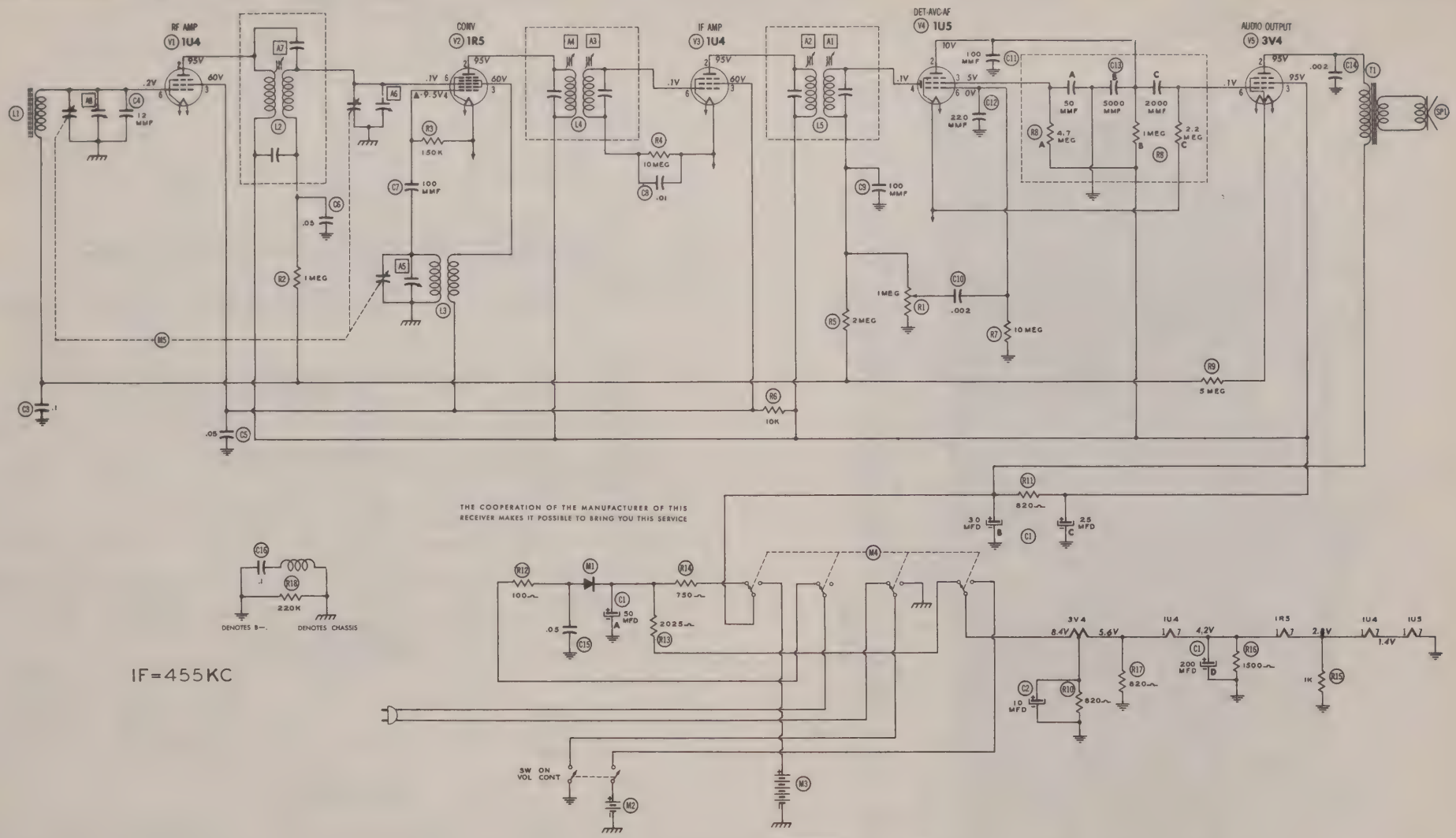


CHASSIS—BOTTOM VIEW



FIRESTONE MODEL 4-C-21 (Code 120-2-C51-U)

FIRESTONE MODEL 4-C-21 (Code 120-2-C51-U)



Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1U4	*	†1.6KΩ	†11KΩ	0Ω	*	1.0Meg	*
V 2	1R5	*	†1.6KΩ	†11KΩ	150KΩ	*	2.0Meg	*
V 3	1U4	*	†1.6KΩ	†11KΩ	0Ω	*	10Meg	*
V 4	1U5	*	†1Meg	†4.7Meg	875KΩ	INF	10Meg	0Ω
V 5	3V4	*	†1.3KΩ	†1.8KΩ	0Ω	*	2.2Meg	*

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MASCO
MODEL MU-17

MASCO
MODEL MU-17

TRADE NAME	Masco Model MU-17
MANUFACTURER	Mark-Simpson Mfg. Co., 32-28 49th St., Long Island City 3, N.Y.
TYPE SET	AC Operated 4 Channel Audio Amplifier
TUBES (SIX)	Types 12AX7 Pre Amp., 6J7 Mic. Pre-Amp., 12AX7 AF Amp. -Phase Inv., (2) 6L6G Audio Output, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts - 50/60 Cycles RATING .93 Amp. @ 117 Volts AC

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PARTS LIST AND DESCRIPTIONS

MASCO MODEL MU-17

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MASCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Pre-Amplifier	12AX7	12AX7	9A	
V2	Mic Pre-Amp.	6J7	6J7	7R	
V3	AF Amplifier-Phase Inverter	12AX7	12AX7	9A	
V4	Audio Output	6L6G	6L6G	7AC	
V5	Audio Output	6L6G	6L6G	7AC	
V6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MASCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲10	450		AFH4-14		UPT21145		FP434.5	TVL-4760	
B	10	450								Note 1
C	■20	450								Note 1
D	▲20	450								
C2	50	50		PRS50/50		BR505		TC39	TVA-1308	
C3	50	50		PRS50/50		BR505		TC39	TVA-1308	
C4	50	50		PRS50/50		BR505		TC39	TVA-1308	
C5	50	50		PRS50/50		BR505		TC39	TVA-1308	
C6	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C8	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C9	.05	600		P688-05	DF-503	PTE6S5		PT615	6TM-S5	
C10	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	PT625	6TM-D5	
C11	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C12	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C13	.1	600		P688-1	DF-104	PTE6P1		PT601	6TM-P1	Note 2

Note 1. Some Models use 10MFD in this application.
Note 2. Not used in all Models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	U-48	Input #1 & #2
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R1A
R2A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	U-48	Input #3
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R2A
R3A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	U-48	Mike Input
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R3A
R4A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	U-48	Tone
B	Shaft		Not Req.	Not Req.	RS-2	Not Req.	Not Req.	Attach to R4A
R5A	50Ω	2			A43-75		C50P	Hum Balance-wire wound-Note
B	Shaft				FKS-1/4		Not Req.	Attach to R5A

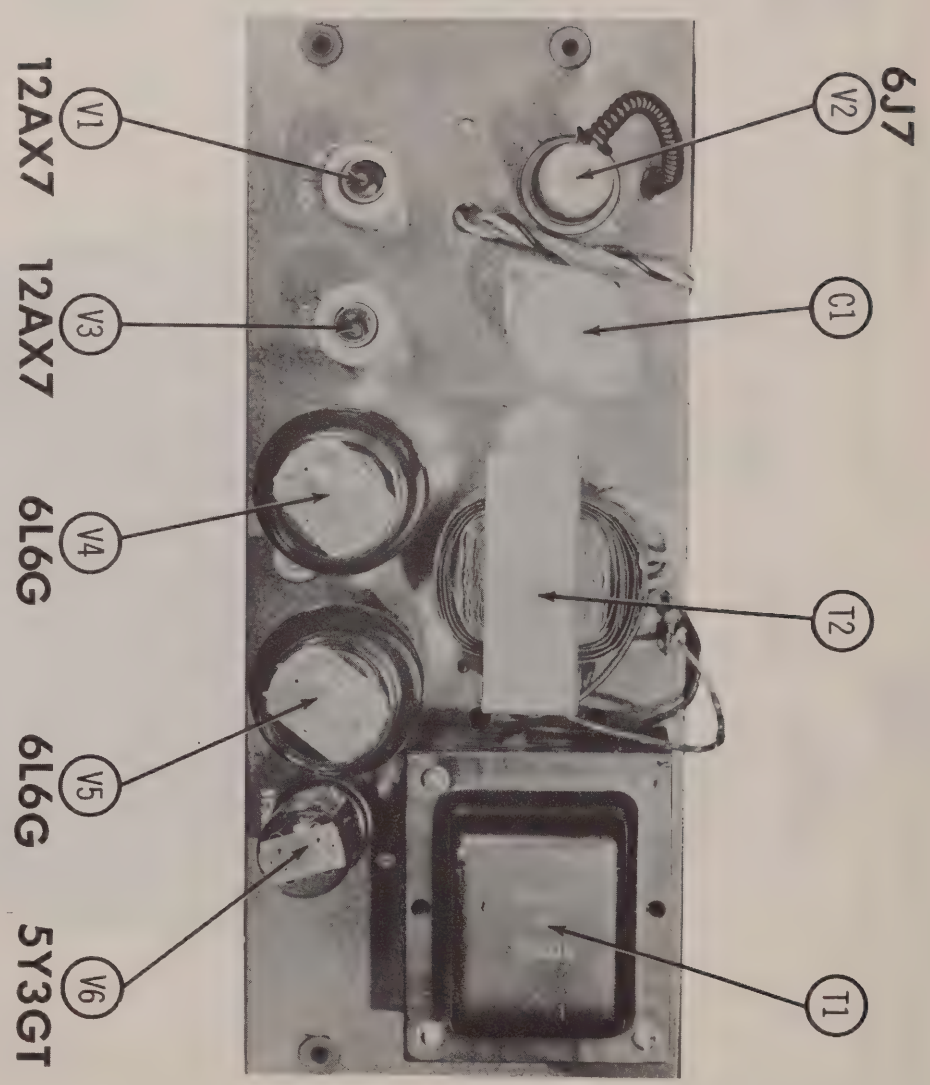
Note : Some Models use an 8Ω control in this application.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	NOTES
R6	270KΩ	½		BTS-270K	
R7	270KΩ	½		BTS-270K	
R8	1Meg	½		BTS-1Meg	
R9	4700Ω	½		BTS-4700	
R10	470KΩ	½		BTS-470K	
R11	100KΩ	½		BTS-100K	
R12	270KΩ	½		BTS-270K	
R13	270KΩ	½		BTS-270K	
R14	470KΩ	½		BTS-470K	
R15	1500Ω	½		BTS-1500	
R16	470KΩ	½		BTS-470K	
R17	2200Ω	½		BTS-2200	
R18	470KΩ	½		BTS-470K	
R19	2.7Meg	½		BTS-2.7Meg	
R20	100KΩ	½		BTS-100K	
R21	470Ω	½		BTS-470	
R22	2200Ω	½		BTS-2200	
R23	470KΩ	½		BTS-470K	
R24	470KΩ	½		BTS-470K	
R25	470KΩ	½		BTS-470K	
R26	8200Ω	½		BTS-8200	
R27	200Ω	5		1 3/4A-200	Note 1
R28	470KΩ	½		BTS-470K	
R29	47KΩ	½		BTS-47K	
R30	5000Ω	1			
R31	12KΩ	½		BTS-12K	
R32	27KΩ	½		BTS-27K	Note 2

Note 1. Some Models use a 125Ω resistor in this application.
Note 2. Some Models use a 270KΩ resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC @ .93A	660VCT .117ADC	5VAC @ 3.9A	6.3VAC @ 3A		P-5059 ①	P-2953	PH-120B	R-16B

① Do not use center tap on low voltage windings.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	4.6KΩ	6.4Ω	103Ω	.46Ω					S-29X	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	MASCO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	12"	PM	6.4Ω		ST-119 Mod. P10-T	10A4	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			MASCO PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	ACM,	2A 250V.			312002	342001	ACM-2	HKP

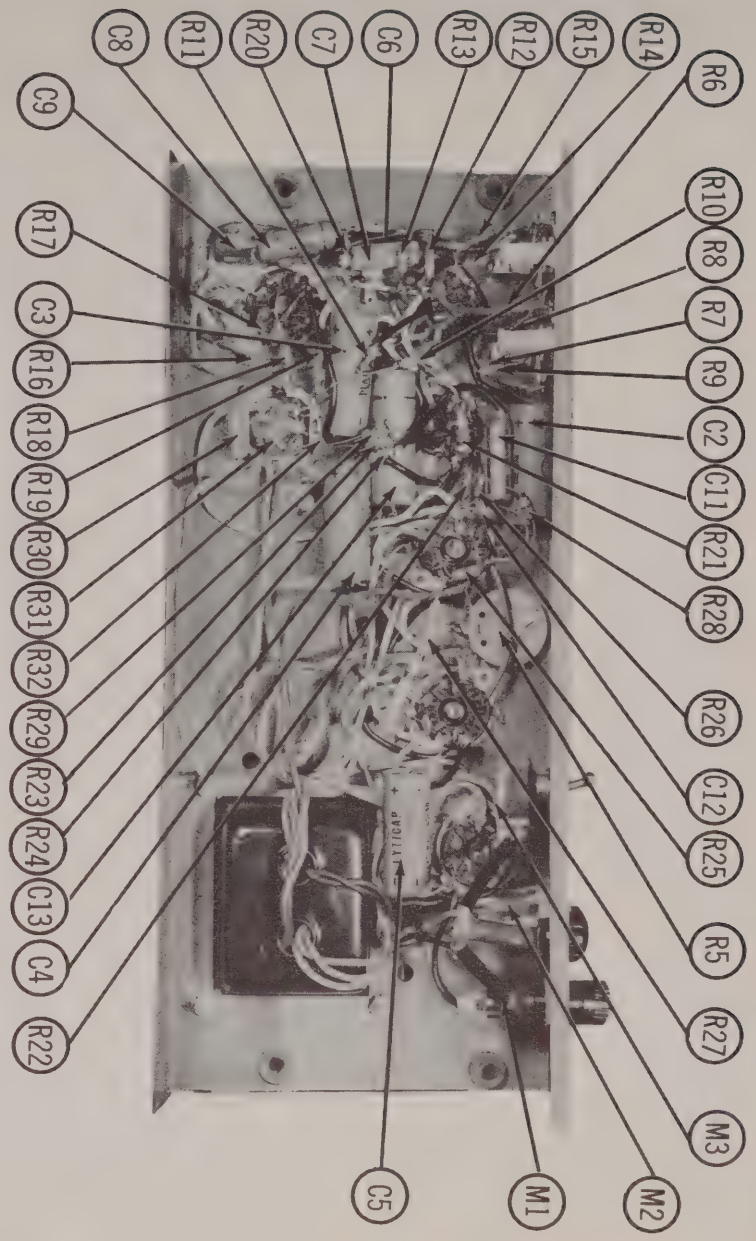
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MASCO PART No.		
M2	Bayonet	6-8	.15	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	MASCO PART No.	NOTES
M3	Switch		On/off

CHASSIS—BOTTOM VIEW



MASCO MODEL MU-17
L. F. [illegible]
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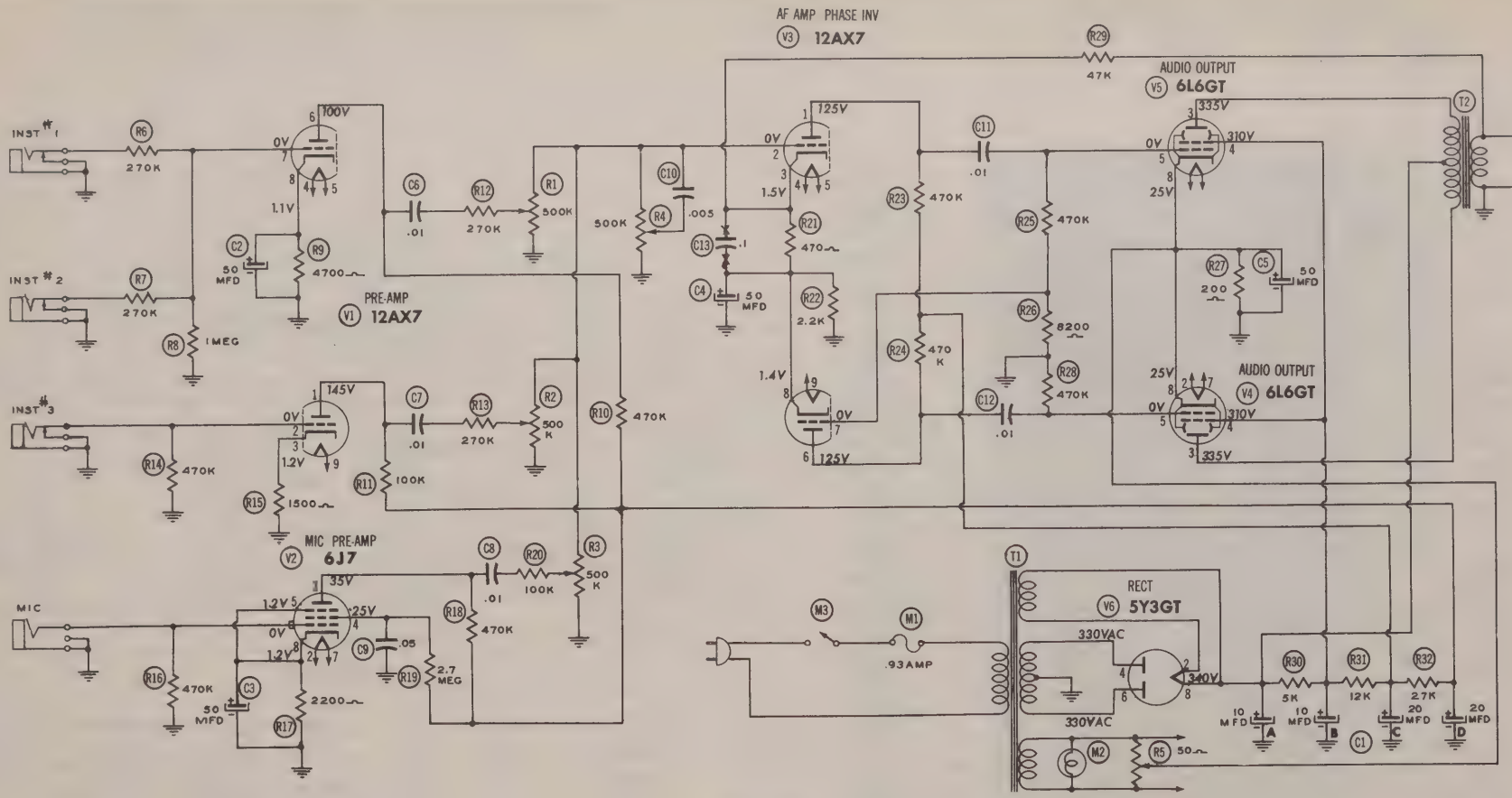
DENVER, COLORADO

MASCO MODEL MU-17



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AX7	†145KΩ	0Ω	1.5KΩ	220Ω	220Ω	†515KΩ	120KΩ	4.7KΩ	220Ω
V 2	6J7	0Ω	220Ω	†515KΩ	†2.7Meg	2.2KΩ	0Ω	220Ω	2.2KΩ	TOP CAP 0Ω
V 3	12AX7	†485KΩ	150KΩ	2.7KΩ	220Ω	220Ω	†485KΩ	8.2KΩ	2.2KΩ	220Ω
V 4	6L6G	0Ω	220Ω	†50Ω	†5KΩ	470KΩ	480KΩ	220Ω	200Ω	
V 5	6L6G	0Ω	220Ω	†53Ω	†5KΩ	480KΩ	INF	220Ω	200Ω	
V 6	5Y3GT	INF	80KΩ	INF	54Ω	INF	50Ω	INF	80KΩ	

† MEASURED FROM PIN 8 OF V6.

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1-DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2-Socket connections are shown as bottom views.
3-Measured values are from socket pin to common negative.
4-Line voltage maintained at 117 volts for voltage readings.
5-Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6- All controls at minimum, proper output load connected.

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MODEL 17X

PARK-VIEW
MODEL 17X

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PARK-VIEW MODEL 17X

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PARK-VIEW
MODEL 17X

TRADE NAME	Park View Model 17X
MANUFACTURER	Park View Television Corp., 3083 3rd. Ave., New York 56, N.Y.
TYPE SET	Television Receiver
TUBES	Nineteen
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	1.06 Amp. @ 117 Volts AC
TUNING RANGE—	Channels 2 thru 13

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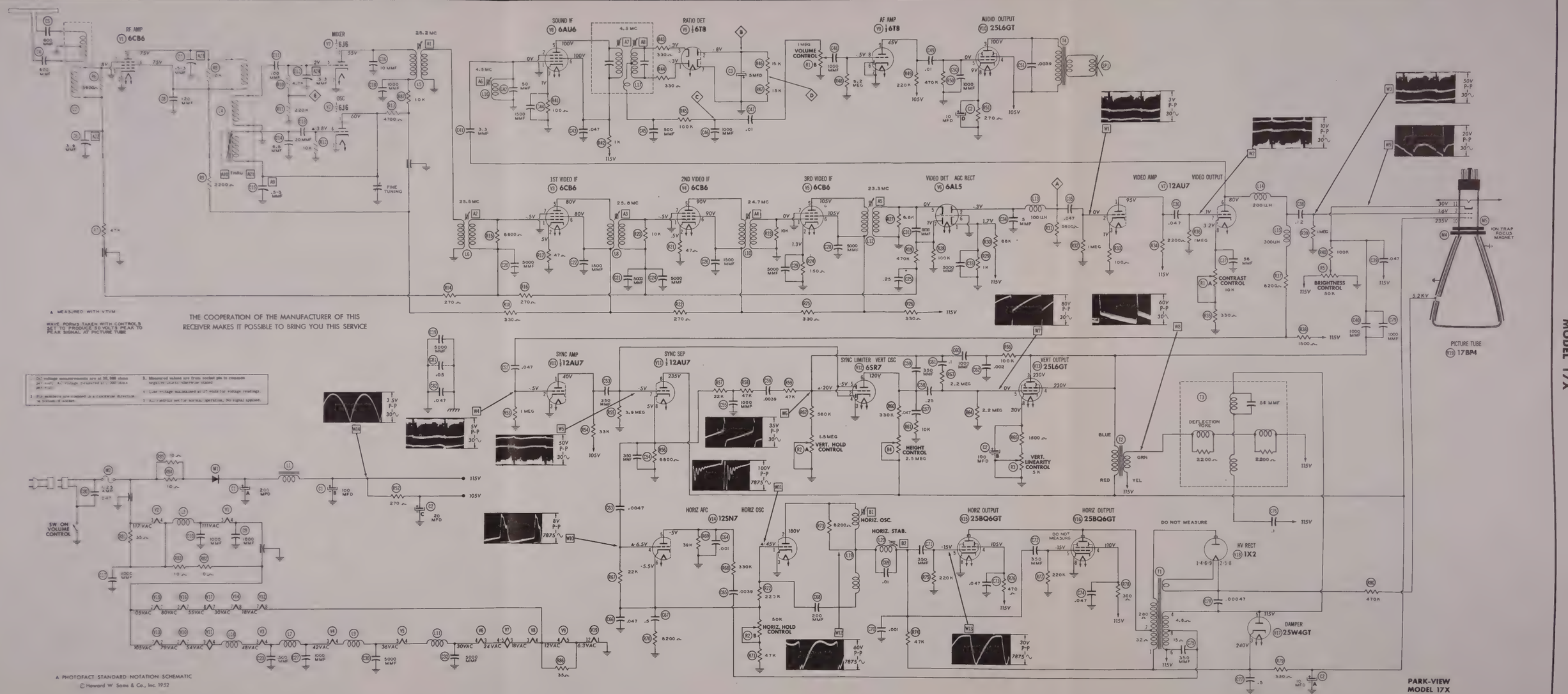
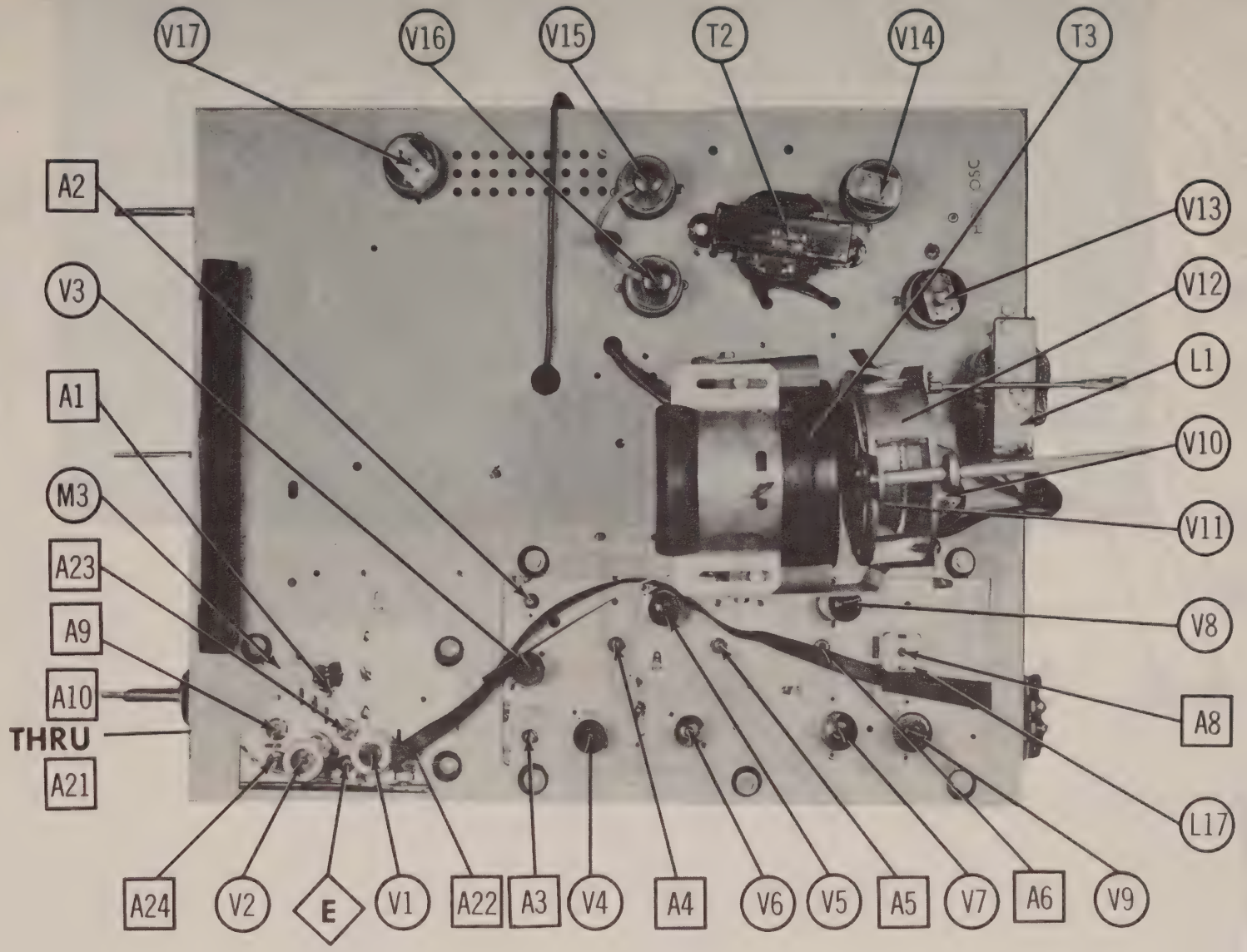
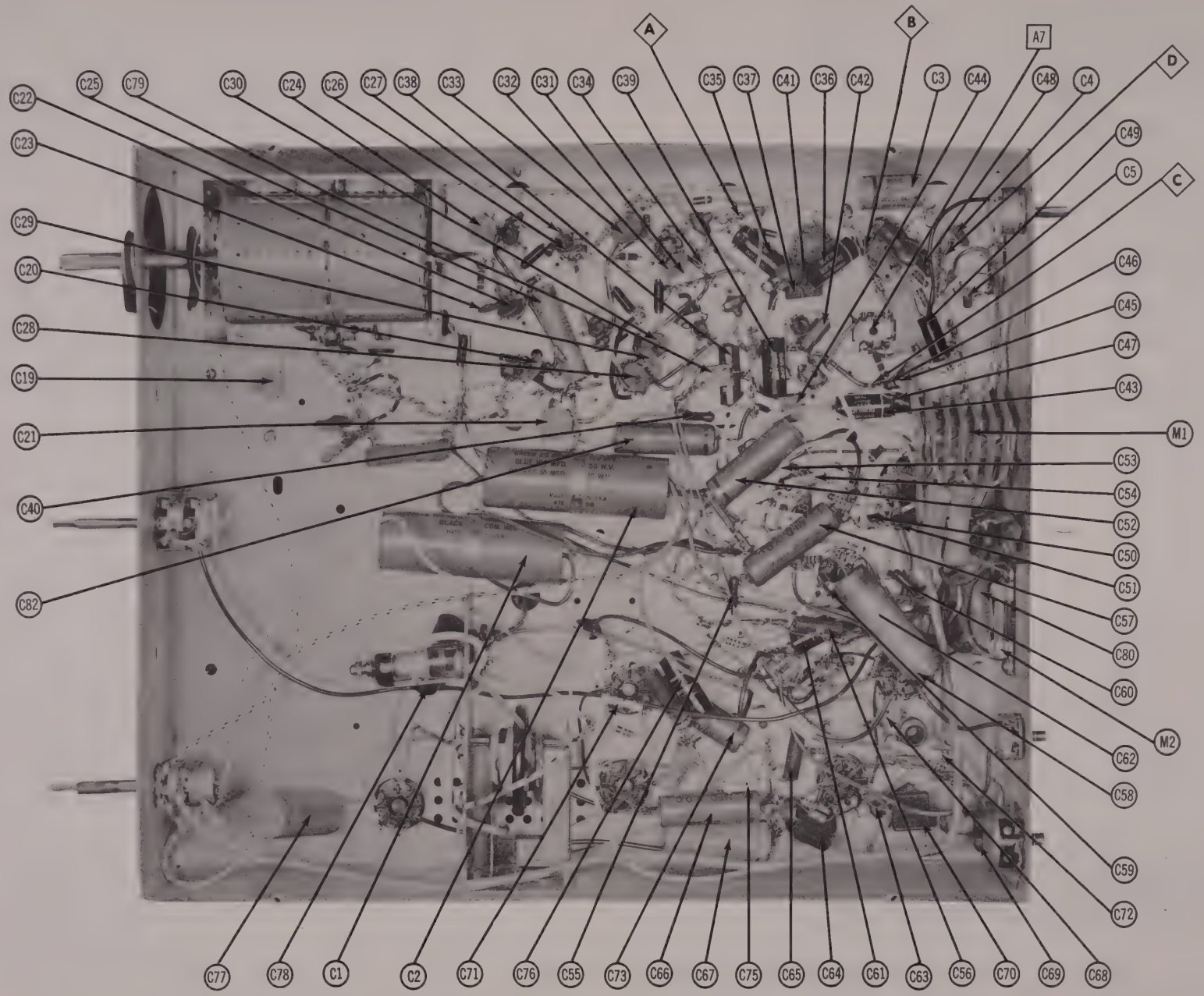


PARK-VIEW MODEL 17X



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART

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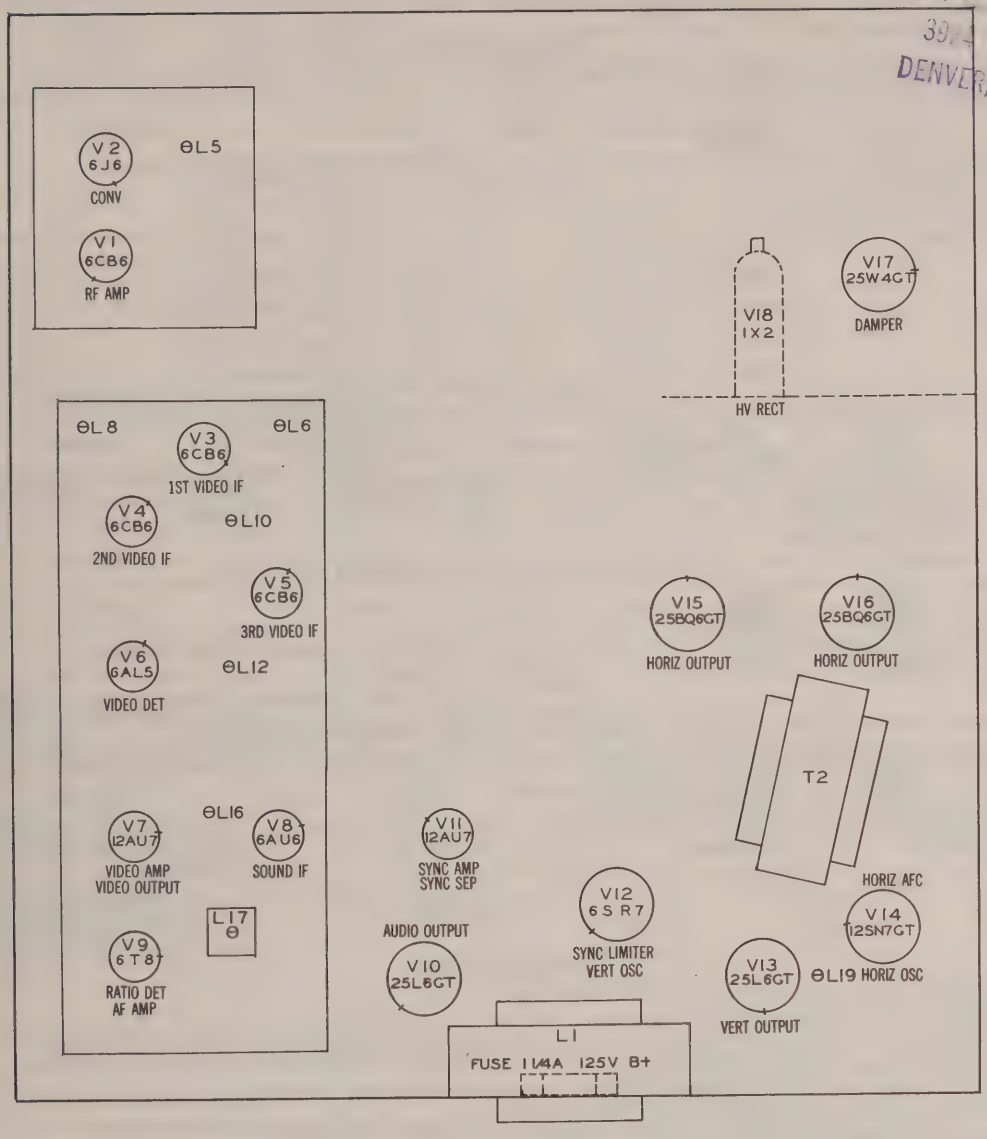


TOP VIEW

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-Selenium Rectifier (M1), Fuse (M2)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6, V7
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V7, V19
Has pic, no sound-V8, V9, V10
Overloaded picture-V6

SYNC FAILURE
No vert. sync.-V11, V12
No horiz. sync.-V11, V14
No vert. or horiz. sync-V11

SWEEP FAILURE
No raster, has sound-V14, V15, V16, V17, V18, V19
No vertical deflection-V13
Poor vert. linearity or foldover-V12, V13
Poor horiz. linearity or foldover-V14, V15, V16, V17
Narrow picture-V14, V15, V16, V17, V18, M1
Vert. off freq.-V11, V12
Horiz. off freq.-V11, V14

Note: Since this receiver employs tubes used in a series parallel filament network, an open filament in any tube in series may cause the set to be inoperative.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage. Use an isolation transformer to protect the test equipment.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to the junction of C25 and R20. Connect the positive lead to B-.
Remove the converter tube, V2, from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to tuner chassis.	25.2MC	Any	DC probe to point (A). Common to B-.	A1	Adjust for maximum deflection.
2.	"	"	25.5MC	"	"	A2	"
3.	"	"	25.8MC	"	"	A3	"
4.	"	"	24.7MC	"	"	A4	"
5.	"	"	23.3MC	"	"	A5	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage form the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube Low side to tuner chassis.	24MC (10MC Swp)	22.25MC 25.75MC	Any	Vert Amp to point (A). Low side to B-.		Check for response curve similar to fig. 1. If necessary retouch A1 thru A5 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.001MFD	High side to point (A) Low side to B-.	4.5MC (Unmod)	Any	DC probe to point (B) Common to B-.	A6, A7	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to point (C) Common to point (D)	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.001MFD	High side to point (A) Low side to B-.	4.5MC (450KC Swp)	4.5MC	Any	Vert amp to point (B) Low side to B-.	A6, A7	Disconnect stabilizer capacitor C3. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
8.	"	"	"	"	"	Vert amp to point (C) Low side to B-.	A8	Reconnect capacitor C3. Adjust fo that 4.5MC occurs at center of crossover lines as in fig 3 SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary.
If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A9. It should be noted that this is an all channel oscillator adjustment, and should not be used to correct any individual channel. If adjustment of A9 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency.
The channel adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC	13	Vert. amp. to point (A). Low side to B-.	A10	Adjust to place video marker at 50% response on the high frequency side of response curve as in fig. 4.
			207MC (10MC Swp)	205.25MC	12		A11	
			201MC (10MC Swp)	199.25MC	11		A12	
			195MC (10MC Swp)	193.25MC	10		A13	
			189MC (10MC Swp)	187.25MC	9		A14	
			183MC (10MC Swp)	181.25MC	8		A15	
			177MC (10MC Swp)	175.25MC	7		A16	
			85MC (10MC Swp)	83.25MC	6		A17	
			79MC (10MC Swp)	77.25MC	5		A18	
			69MC (10MC Swp)	67.25MC	4		A19	
			63MC (10MC Swp)	61.25MC	3		A20	
			57MC (10MC Swp)	55.25MC	2		A21	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point (E). Low side to tuner chassis.	A22, A23 A24	Adjust for response curve as in fig. 5 with markers above 90%.
11.		"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response curve as in fig. 5. If markers fall below 70% on any channel make compromise adjustments of A22, A23, and A24 with channel switch set to that channel, then recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

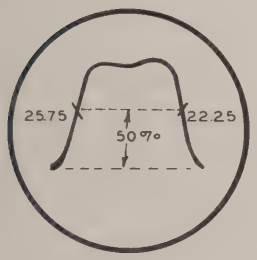


FIG. 1

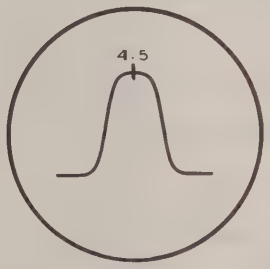


FIG. 2

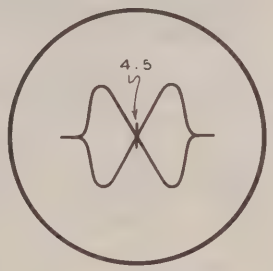


FIG. 3

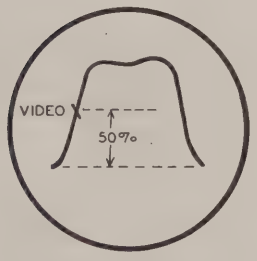


FIG. 4

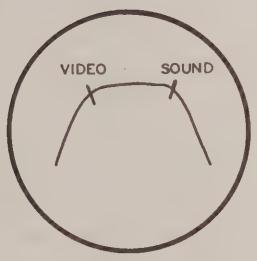
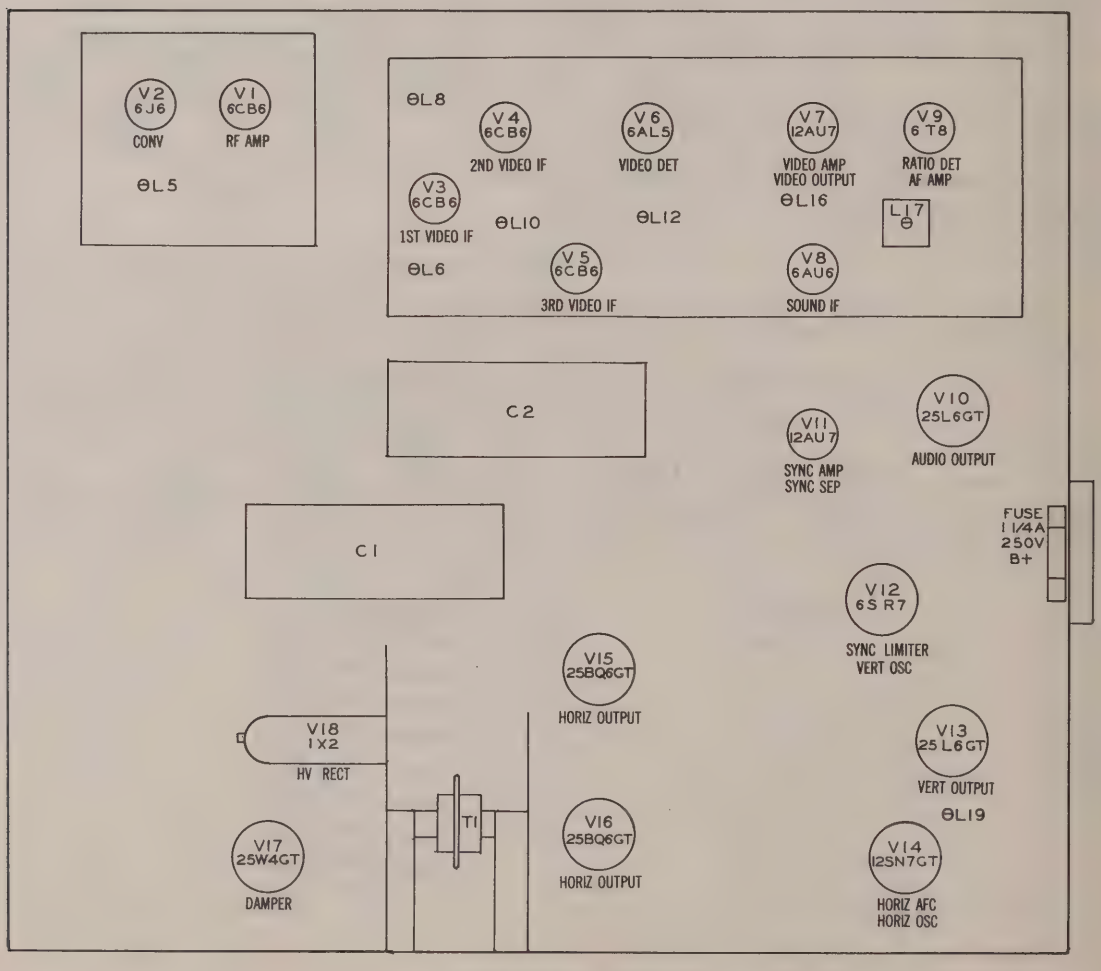


FIG. 5

RESISTANCE MEASUREMENTS

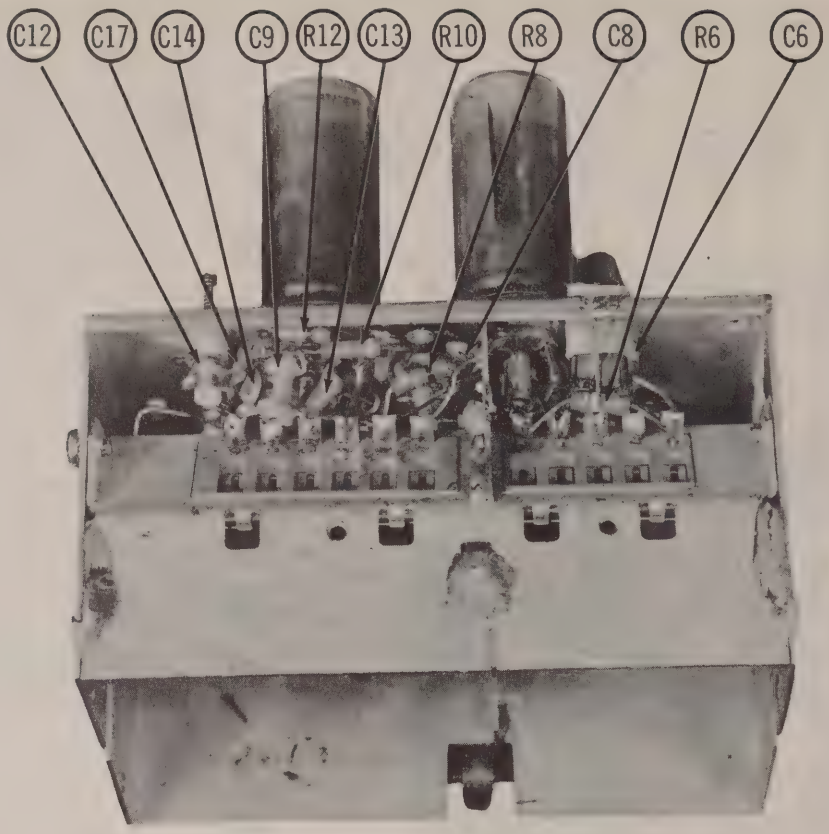
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	615KΩ	0Ω	27Ω	25Ω	†3.5KΩ	†3.5KΩ	0Ω		
V 2	6J6	†6KΩ	†11KΩ	29Ω	27Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	570KΩ	47Ω	18Ω	17Ω	†975Ω	†975Ω	0Ω		
V 4	6CB6	570KΩ	47Ω	17Ω	15Ω	†705Ω	†705Ω	0Ω		
V 5	6CB6	.4Ω	150Ω	15Ω	12Ω	†375Ω	†375Ω	0Ω		
V 6	6AL5	1KΩ	5.6KΩ	10Ω	12Ω	.4Ω	0Ω	100KΩ		
V 7	12AU7	†2.2KΩ	1Meg	100Ω	10Ω	10Ω	†9.7KΩ	1 Meg	450Ω	7Ω
V 8	6AU6	1.3Ω	0Ω	7Ω	3.5Ω	†1KΩ	†1KΩ	100Ω		
V 9	6T8	INF	30K Ω	INF	3.5Ω	1.5Ω	0Ω	0Ω	8.2Meg	†220KΩ
V 10	25L6GT	INF	22Ω	†460Ω	†317Ω	470KΩ	INF	20Ω	270Ω	
V 11	12AU7	†33KΩ	1 Meg	0	18Ω	18Ω	#330Ω	3.9Meg	6.8KΩ	20Ω
V 12	6SR7	INF	1.5Meg	0Ω	3.9 Meg	3.9Meg	#400KΩ	6.5Ω	3.5Ω	
V 13	25L6GT	INF	22Ω	#900Ω	#900Ω	2.2Meg	0Ω	25Ω	3KΩ	
V 14	12SN7GT	300KΩ	#47KΩ	0Ω	100KΩ	39KΩ	75KΩ	12Ω	6.5Ω	
V 15	25BQ6GT	#47KΩ	25Ω	INF	†517Ω	220KΩ	INF	22Ω	0Ω	Top Cap #32Ω
V 16	25BQ6GT	INF	22Ω	INF	#347Ω	220KΩ	0Ω	18Ω	0Ω	Top Cap #32Ω
V 17	25W4GT	INF	INF	240KΩ	INF	†66Ω	INF	12Ω	18Ω	
V 18	1X2	PINS 1-9 HAVE INF RESISTANCE								Top Cap #312Ω
V 19	17BP4	0Ω	1 Meg	Pin 10 #330Ω	Pin 11 110KΩ	Pin 12 1.5Ω				

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM OUTPUT OF M1
# MEASURED FROM PIN 3 OF V17

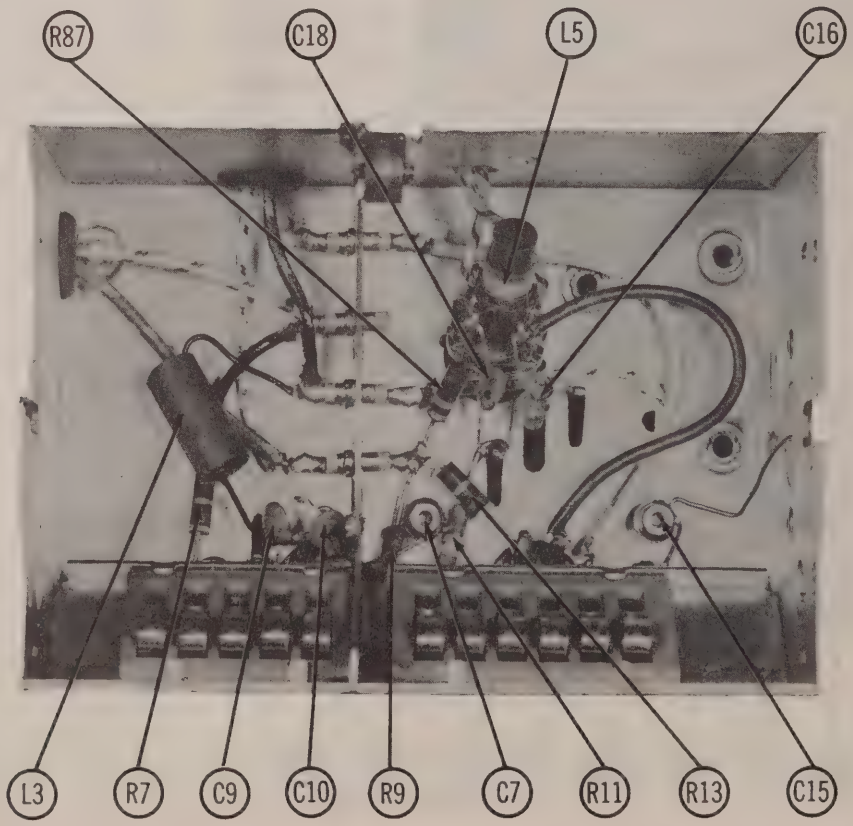


BOTTOM VIEW

TUBE PLACEMENT CHART

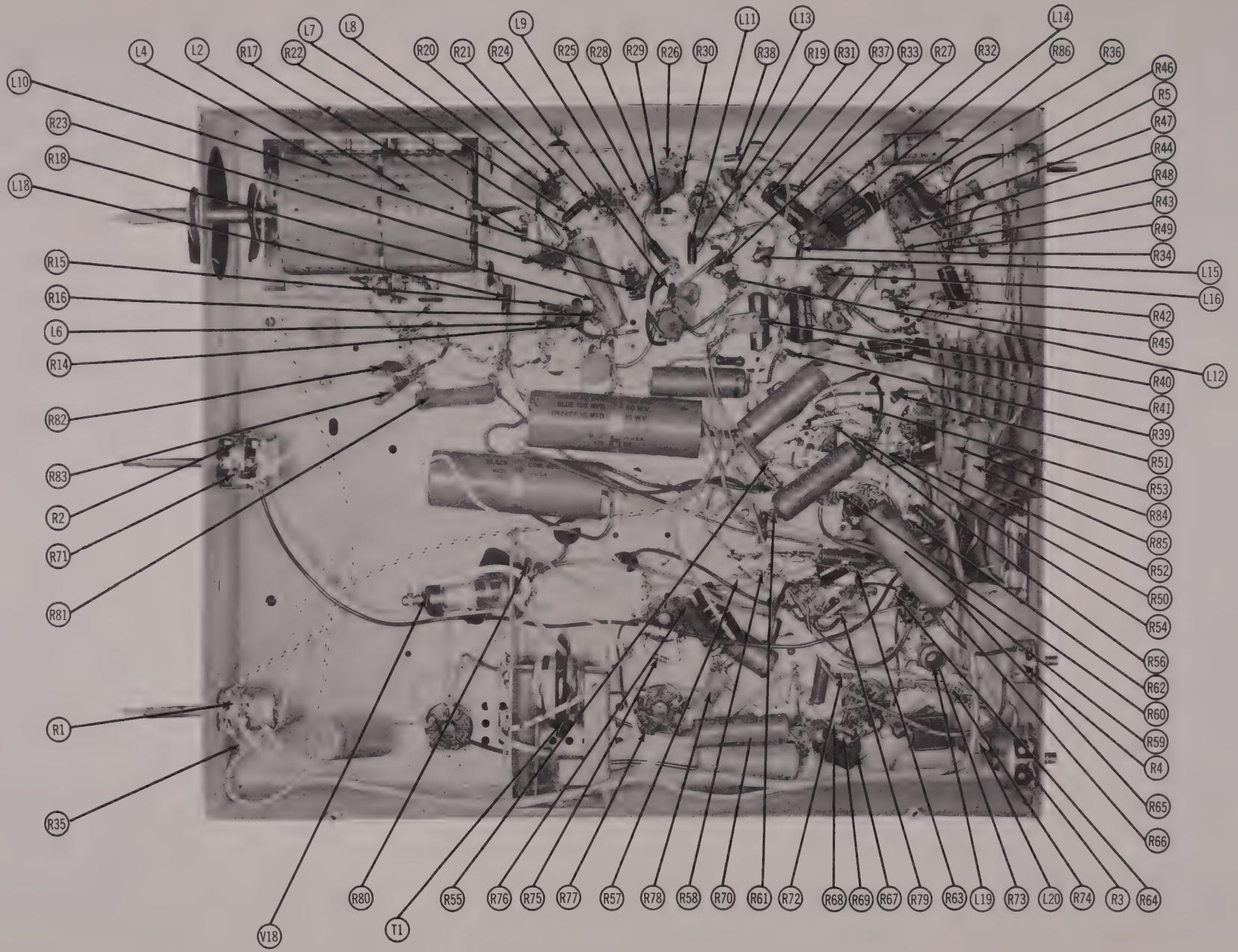


RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

PROPERTY OF
L. F. FRANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARK-VIEW
MODEL 17X

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PARK VIEW PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6CB6	6CB6	7CM	
V2	Converter	6J8	7BF	7BK	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector	6A L5	6AL5	6BT	
V7	Video Amplifier - Video Output	12AU7	12AU7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Detector - AF Amplifier	6T8	6T8	9E	
V10	Audio Output	25L6GT	25L6GT	7AC	
V11	Sync Amplifier - Sync Separator	12AU7	12AU7	9A	
V12	Sync Limiter - Vert. Oscillator	6SR7	6SR7	8Q	
V13	Vert. Output	25L6GT	25L6GT	7AC	
V14	Horiz. AFC - Horiz. Oscillator	12SN7GT	12SN7GT	8BD	
V15	Horiz. Output	25BQ6GT	25BQ6GT	6AM	
V16	Horiz. Output	25BQ6GT	25BQ6GT	6AM	
V17	Damper	25W4GT	25W4GT	4CG	
V18	HV Rectifier	1X3	1X3	9Y	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: PARK VIEW PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V19	17BP4	17BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PARK VIEW PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	200	150		PRS150/100-100		UPE201515		FP216.3	TVL-2445	Red
B	100	150		PRS150/100						Green
C2A	10	300		AFH4-55				4N723	TVL-3817	Red
B	100	50						TC23	TVA-1204	Blue
C	20	150								Green
D	10	10								Yellow
C3	5	50		PRS150/4		BR550		TC30	TVA-1303	
C4	600				D6-601					
C5	600				D6-601					
C6	3-9				829-10					
C7	.5-3				829-3			CT565A		
C8	120			SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C9	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C10	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C11	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C12	.5-3				829-3			CT565A		
C13	20			SI20NP0	TCZ-20		NP0K-200	ZT-542	5TCC-Q2	
C14	6.8							CT565A		
C15	.5-3				829-3					
C16	10			SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C17	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C18	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C19	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C20	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C21	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C22	1500			BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C23	1500			BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C24	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C25	.25	400		P488-25		PTE4P25		PT4025	4TM-P25	
C26	1500			BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C27	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C28	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C29	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C30	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C31	500			SI500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	
C32	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C33	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C34	5			SI5	TCZ-4.7	5W5V5	GP1K-050	UC-555	5GA-V5	
C35	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C36	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C37	56	500								
C38	.12	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C39	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C40	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C41	3.3			SI3.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C42	50	500		1468-00005	D6-500	5W5Q5	GP1K-500	MC225	1FM-45	
C43	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C44	1500			BPD-0015	DD-152	TM5D15	801-0015	DC-5215	5HK-D15	
C45	500			SI500	D6-501	TM5T5	GP2K-501	UC-535	5GA-T5	
C46	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C47	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C48	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C49	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C50	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C51	.0039	400		P688-004	D6-402	PTE6D4	GP2-333-402	PT624	6TM-D4	
C52	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C53	350			1468-00035					1FM-335	
C54	350			1468-00035					1FM-335	
C55	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C56	.0039	400		P688-004	D6-402	PTE6D4	GP2-333-402	PT624	6TM-D4	
C57	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C58	.25	600		684-25		PTE6P25		PT6P25	6TM-P25	

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PARK VIEW PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C59	350			1468-00035					1FM-335	
C60	1000			SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C61	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C62	.002	400		P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C63	.0047	400		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C64	.001	400		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C65	.0039	600		P1068-004		PTE16D4		PT1624	MB-D4	
C66	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C67	.5	400		485-5		P34P5		PT405	4TM-P5	
C68	200				TCN-200		N750L-201		5TCU-T2	
C69	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C70	.001	400		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C71	350			1468-00035					1FM-335	
C72	350			1468-00035					1FM-335	
C73	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C74	.047	600		P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C75	350			1468-00035					1FM-335	Note 1
C76	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C77	.5	400		485-5		P34P5		PT405	4TM-P5	
C78	.00047	10000		10084-0005		PTE100T5			TVM-351	
C79	1000	500		1468-001	D6-102	1WED1	GP2L-102	MC255	1FM-21	
C80	.047	600		P688-047		PTE6S47		PT6147	6TM-S47	
C81	.05	600		P688-05		PTE635		PT615	6TM-S5	Note 2
C82	.047	600		P688-047		PTE6S47		PT6147	6TM-S47	

Note 1. Used only if required.
Note 2. Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PARK VIEW PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	10KΩ	½		*	RTV-7		UF14L	Contrast-Panel
B	1Meg	½					UR16T1253	Volume-Tapped ④ 130KΩ-Rear
C	Switch						US-26	Attach to R1B
R2A	1.5Meg	½	18-002	QJ-189 **	RTV-8 3		UF26L	Vert. Hold-Panel
B	50KΩ	½					UR54L	Horiz. Hold-Rear
R3A	5000Ω	2	D220076G29	W-5000	A43-5000	VK-135	R5000L	Vert. Linearity - Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R3A
R4A	2.5Meg	½	E22464-10	Q11-239	AG-84-8	AB-83	SU-565	Height
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	50KΩ	½	TVC-529-D	C11-123	AG-44-8	B-31	U-35	Brightness
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R5A

* CONCENTRIKIT EQUIVALENT - KIT K-2, BASE ELEMENTS & SHAFTS B17-116 & P1-128 (Panel) B13-137 & R1-212 (Rear) & SWITCH 76-1

** CONCENTRIKIT EQUIVALENT - KIT - K-2 BASE ELEMENTS & SHAFTS B11-138 & P1-128 (Panel) B11-123 & R1-212 (Rear)

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: PARK VIEW PART No.	IRC PART No.	NOTES
R6	3900Ω	½		BTS-3900	
R7	47KΩ	½			
R8	10KΩ	½		BTS-10K	
R9	2200Ω	½		BTS-2200	
R10	4700Ω	½		BTS-4700	
R11	220KΩ	½		BTS-220K	
R12	10KΩ	½		BTS-10K	
R13	4700Ω	½		BTS-4700	
R14	270Ω	½		BTS-270	
R15	6800Ω	½			
R16	270Ω	½		BTS-270	
R17	47Ω	½			
R18	330Ω	½		BTS-330	
R19	470KΩ	½		BTS-470K	
R20	10KΩ	½		BTS-10K	
R21	47Ω	½			
R22	270Ω	½		BTS-270	
R23	10KΩ	½		BTS-10K	
R24	150Ω	½		BTS-150	
R25	330Ω	½		BTS-330	
R26	330Ω	½		BTS-330	
R27	6800Ω	½		BTS-6800	
R28	100KΩ	½		BTS-100K	
R29	1000Ω	½		BTS-1000	
R30	68KΩ	½		BTS-68K	
R31	5600Ω	½		BTS-5600	
R32	1 Meg	½		BTS-1 Meg	
R33	100Ω	½		BTS-100	
R34	2200Ω	½		BTS-2200	
R35	330Ω	½		BTS-330	
R36	1 Meg	½		BTS-1 Meg	
R37	8200Ω	½		BTS-8200	
R38	1500Ω	½		BTS-1500	
R39	1 Meg	½		BTS-1 Meg	
R40	100KΩ	½		BTS-100K	
R41	100Ω	½		BTS-100	
R42	1000Ω	½		BTS-1000	
R43	330Ω	½		BTS-330	
R44	330Ω	½		BTS-330	
R45	100K	½		BTS-100K	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: PARK VIEW PART No.	IRC PART No.	NOTES
R46	15KΩ	½		BTS-15K	
R47	15KΩ	½		BTS-15K	
R48	8.2Meg	½		BTS-8.2Meg	
R49	220K Ω	½		BTS-220K	
R50	470KΩ	½		BTS-470K	
R51	270Ω	½		BTS-270	
R52	270Ω	1		BTA-270	
R53	1 Meg	½		BTS-1 Meg	
R54	33KΩ	½		BTS-33K	
R55	3.9Meg	½		BTS-3.9Meg	
R56	6800Ω	½		BTS-6800	
R57	22KΩ	½		BTS-22K	
R58	47KΩ	½		BTS-47K	
R59	47KΩ	½		BTS-47K	
R60	330KΩ	½		BTS-330K	
R61	10KΩ	½		BTS-10K	
R62	560KΩ-5%	½		BTS-5600-5%	
R63	2.2Meg	½		BTS-2.2Meg	
R64	2.2Meg	½		BTS-2.2Meg	
R65	1500Ω	½		BTS-1500	
R66	100KΩ	½		BTS-100K	
R67	22KΩ	½		BTS-22K	
R68	330KΩ	½		BTS-330K	
R69	39KΩ	½		BTS-39K	
R70	8200Ω	½		BTS-8200	
R71	47KΩ	½		BTS-47K	
R72	220KΩ	½		BTS-220K	
R73	8200Ω	½		BTS-8200	
R74	47KΩ	½		BTS-47K	
R75	220KΩ	½		BTS-220K	
R76	470Ω	2		BTS-470	
R77	220KΩ	½		BTS-220K	
R78	300Ω	5		1 3/4A-300	
R79	330Ω	½		BTS-330	
R80	470KΩ	½			
R81	35Ω	10		1 3/4A-35	
R82	10Ω	5			
R83	10Ω	5			
R84	10Ω	5			
R85	10Ω	5			
R86	35Ω	5		1 3/4A-35	
R87	10KΩ	½		BTS-10K	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: PARK VIEW PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	312.1tap ③ 32Ω	19.6Ω tap ③ 4.6Ω SEC. 2 0Ω						Horiz. Output Trans.
T2	570Ω	6Ω		A-8115 ①	A-3038 MDF-71 ②	TSO-5 ① TY-6 ②	A-89X Y249 ②	Vert. Output Trans. Horiz. Deflection Coils
T3A	20Ω 58Ω							Vert. Deflection Coils

① Mount on top of chassis.
③ Use original deflection network.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: PARK VIEW PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T4	2KΩ	2.9Ω	145Ω	.39Ω	11A1	A-3332 ①	A-2928 ①	RO-2 ①	S-1X ①	① Bend mtg tabs down, file out slots, mount on original mounting bracket.

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: PARK VIEW PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	6"	PM	2.9Ω		ST-108 Mod. P6-X	6A1	

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: PARK VIEW PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.200A	46.8Ω	1.2 Hy.	C-22561-2	C-2326 ①	C-2991	TR-1733	C-23X

① Drill one new mtg. hole

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: PARK VIEW PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
L2	Ant. Coils	0Ω				
L3	Fil. Choke	0Ω				
L4	RF, Mixer Grid & Osc. Coils	0Ω				
L5	Conv. Plate	.6Ω	.1Ω			
L6	1st. Video IF	.1Ω	.3Ω			
L7	Fil. Choke	0Ω				
L8	2nd. Video IF	.4Ω	.4Ω			
L9	Fil. Choke	0Ω				
L10	3rd. Video IF	.4Ω	.4Ω			
L11	Fil. Choke	0Ω				
L12	4th. Video IF	.4Ω	.4Ω			
L13	Series Peaking Coil	9Ω			TV-181	100 Microhenries
L14	Series Peaking Coil	9.2Ω			TV-184	200 Microhenries
L15	Shunt Peaking Coil	9.4Ω			TV-185	300 Microhenries
L16	Sound IF	1.3Ω			TV-151	
L17	Ratio Det.	5.6Ω	2Ω CT		TV-115	Tertiary Winding - .7Ω
L18	Fil. Choke	0Ω				Tapped ④ 22Ω
L19	Horiz. Osc.	83Ω				
L20	Horiz. Stabilizer	47Ω			TV-163	

SELENIUM RECTIFIER

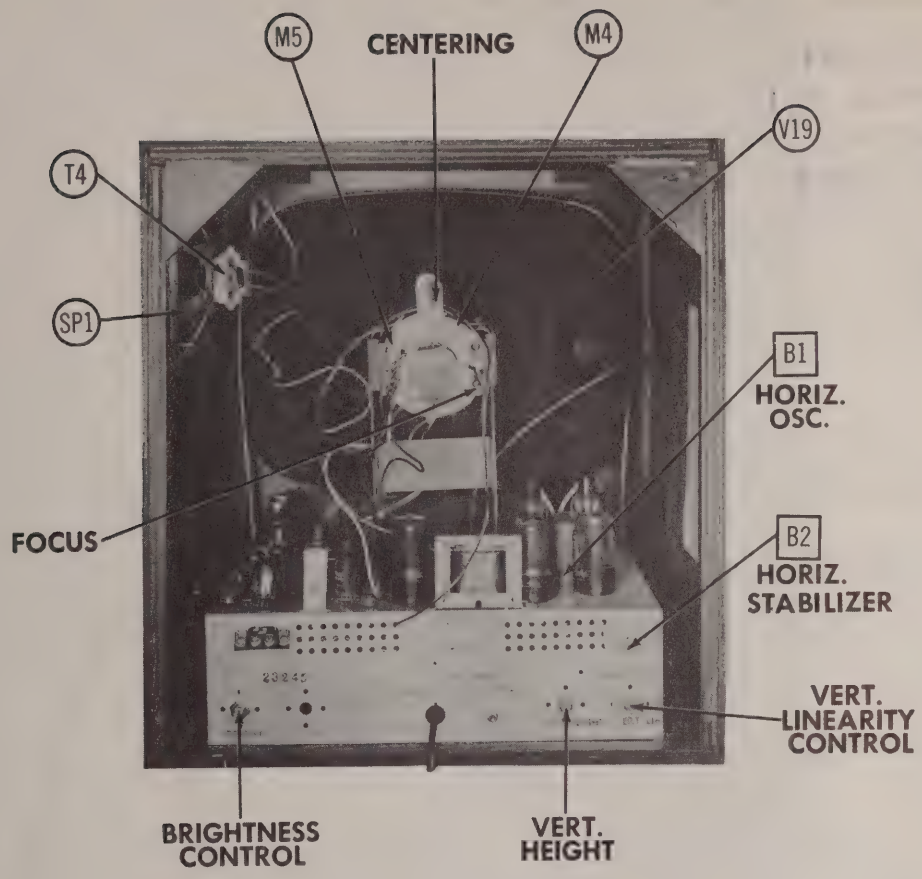
ITEM No.	RATING: CURRENT	REPLACEMENT DATA: PARK VIEW PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	NOTES
M1	.260	SR-1000-1	NH5	6Q82	1023	6S300	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: PARK VIEW PART No. FUSE	PARK VIEW PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M2	3AG Slo/Blo	1 1/4A			3131.25	356001	MDL 1 1/4	4497

MISCELLANEOUS

ITEM No.	PART NAME	PARK VIEW PART No.	NOTES
M3	RF Tuner		Standard Coil
M4	Focus Magnet		
M5	Ion Trap		



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Set the horizontal hold control at the center of its range and adjust the horizontal oscillator slug (B1) until the picture synchronizes horizonally.
Check the effective range of the horizontal hold control by setting at both extremes of its rotation and momentarily switching off channel and back.
Picture should return to sync in each case.
If picture does not return to sync at one extreme setting of the horizontal hold control slight readjustment of B1 may correct this.
If adjustment of B1 fails to yield satisfactory synchronization it may be necessary to adjust the horizontal stabilizer slug (B2).
Connect the vertical amplifier of an oscilloscope through 47KΩ to the junction of L19 and L20. Connect the low side of scope to B-.
Set the horizontal hold control fully clockwise.
Adjust B2 for a waveform as shown in fig. 6 with the broad and narrow peaks of equal height. If necessary keep the picture synchronized by adjusting B1.
Recheck the sync range of the horizontal hold control as outlined above.

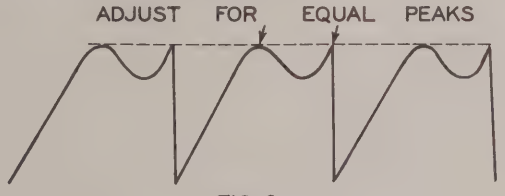


FIG. 6

DISASSEMBLY INSTRUCTIONS

1. Remove 6 push on type control knobs from front panel.
2. Remove 4 wood screws holding rear cover. Remove rear cover
3. Disconnect speaker.
4. Remove 4 chassis. bolts . Remove chassis.
5. Remove 4 nuts holding speaker. Remove speaker.

Note: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PHOTOFACT* Folder

PHILCO MODELS 53-T1853, L, 53-T2127, 53-T2266, 53-T2268, 53-T2269, 53-T2270, 53-T2271, 53-T2273C, M (Code 126) (Ch. J-1, 91)

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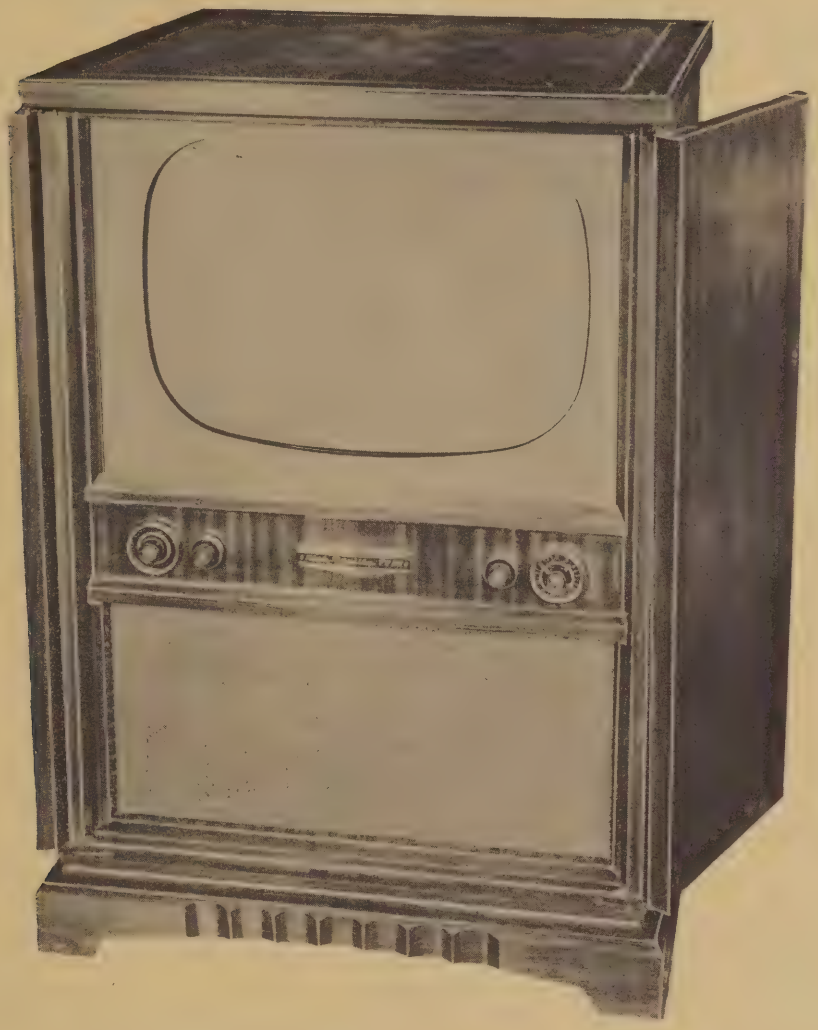

MODEL 53-T2269

PHILCO MODELS 53-T1853, L, 53-T2127, 53-T2266, 53-T2268, 53-T2269, 53-T2270, 53-T2271, 53-T2273C, M (Code 126) (Ch. J-1, 91)

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DATE 11-52 SET 185 FOLDER 10

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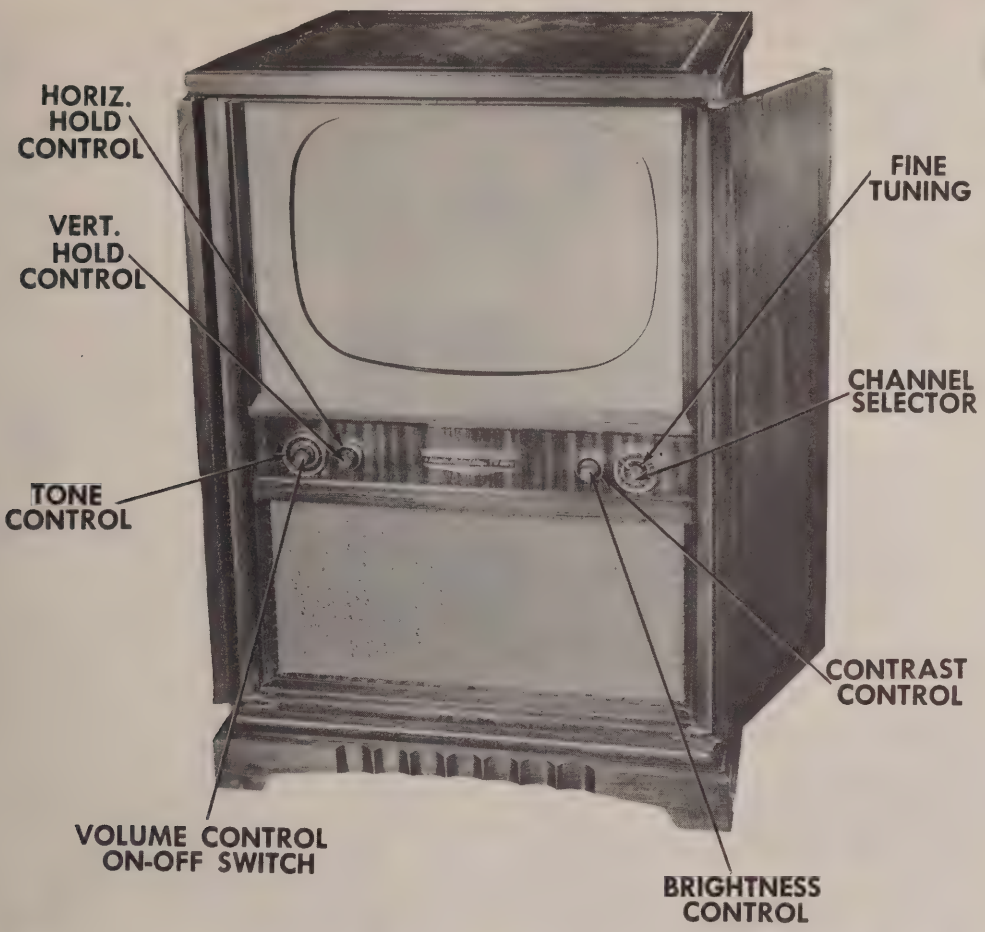

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PHILCO 53-T2269

TRADE NAME	Philco Models 53-T1853, T1853L, T2127, T2266, T2268, T2269, T2270, T2271, T2273C, T2273M, (RF-IF Ch. 91, Swepp Ch. J1) Code 126
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	Television Receiver
TUBES	Twenty-Two
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	1.64Amp @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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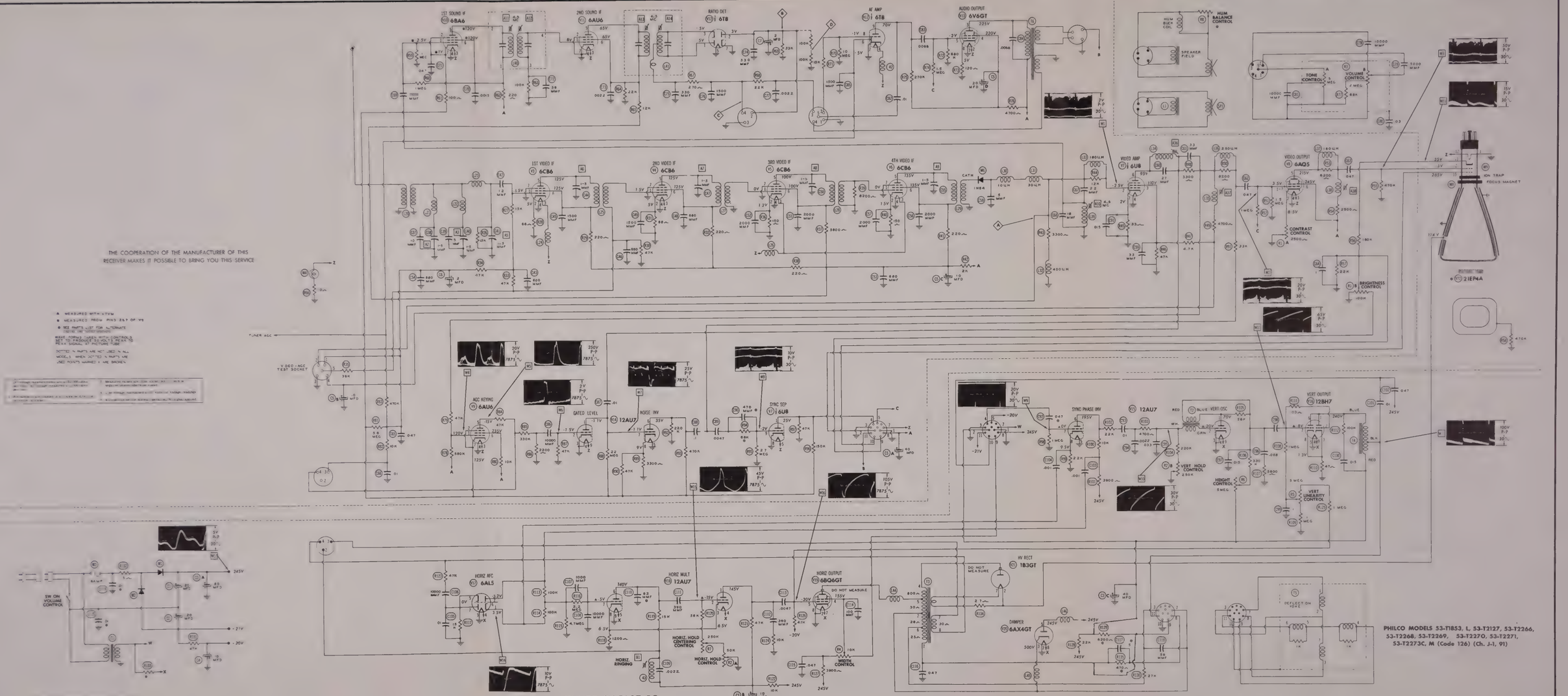

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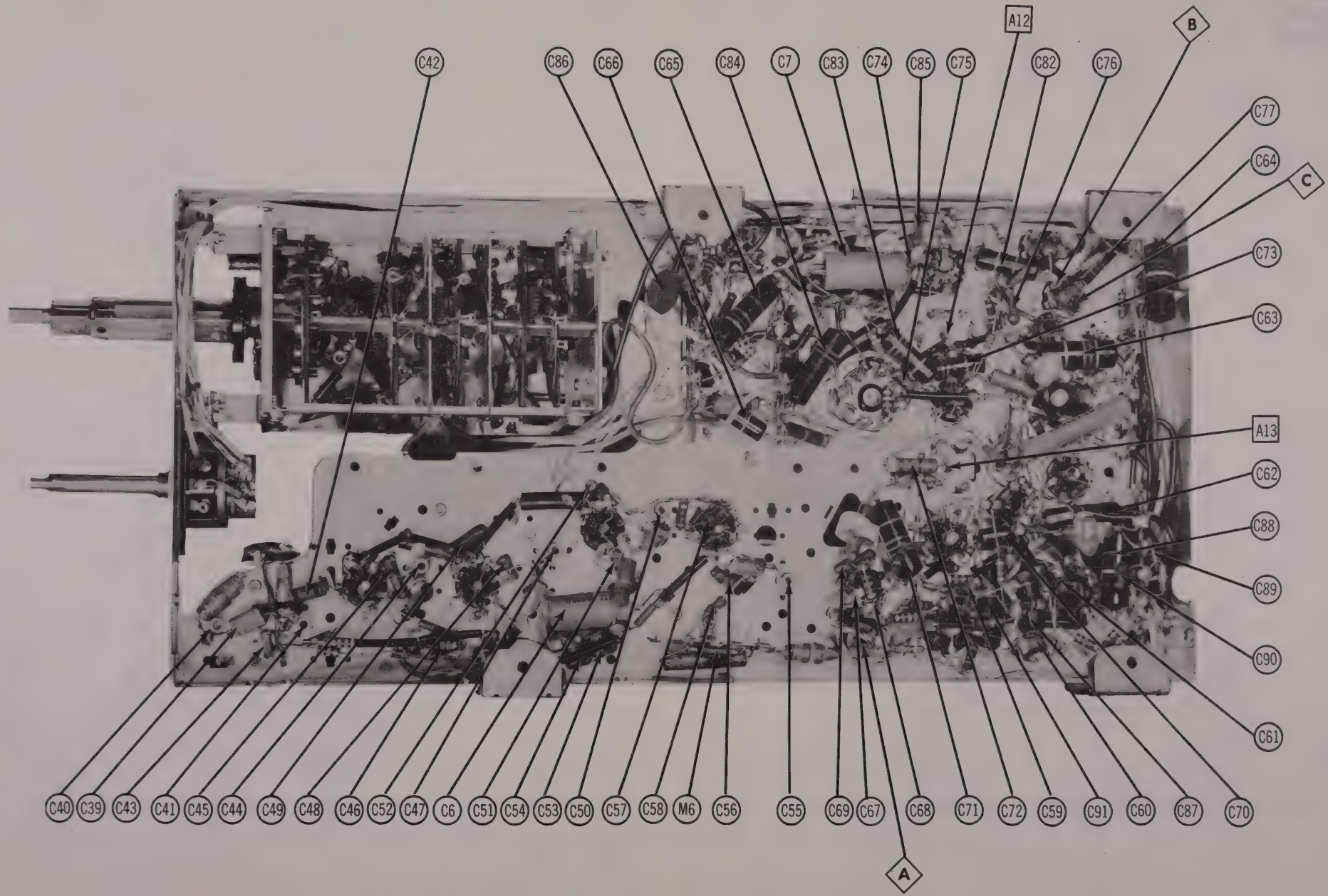
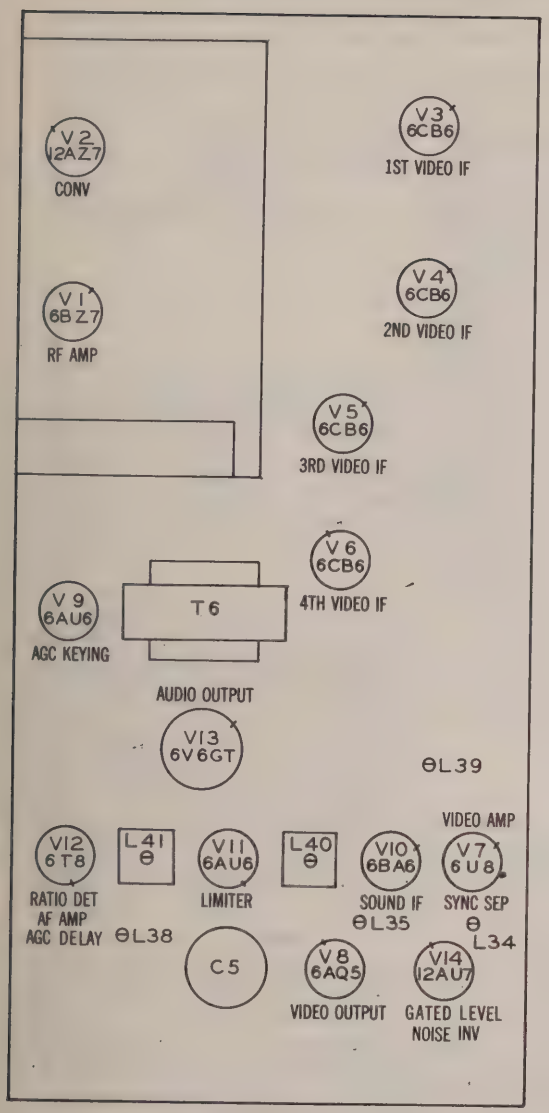
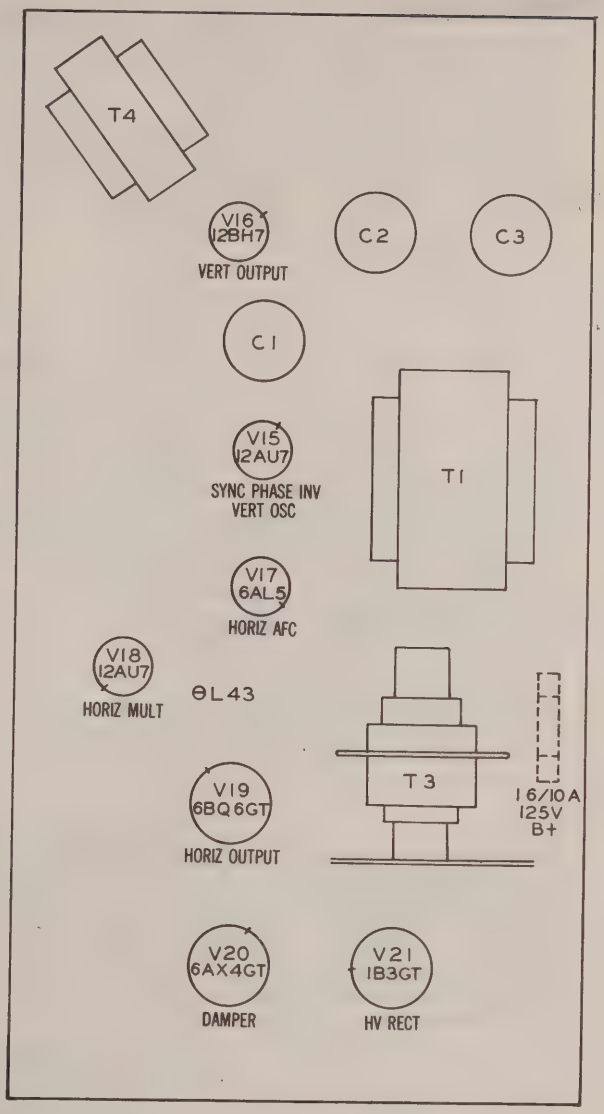
RF-IF CHASSIS–TOP VIEW



RF-IF CHASSIS-BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART





TOP VIEWS

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type to tube.

POWER SUPPLY FAILURE
No raster, no sound-Selenium Rectifiers (M1, M2) Fuse (M3)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6
No pic, no sound, has snow-V1, V2, V3
No pic, has sound, has raster-V7, V8, V22
Has pic, no sound-V10, V11, V12, V13
Overloaded picture-V19

SYNC FAILURE
No vert sync-V15
No horiz. sync-V15, V17, V18
No vert or horiz. sync-V7, V14, V15

SWEEP FAILURE
No raster, has sound-V18, V19, V20, V21, V22
No vertical deflection-V16
Poor vert. linearity or foldover-V15, V16
Poor horiz. linearity or foldover-V18, V19, V20
Narrow picture-V18, V19, V20, V21, M1, M2
Vert. off freq.-V15
Horiz. off freq-V15, V17, V18

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage leas should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage. Use an isolation transformer to protect the test equipment.

VIDEO IF ALIGNMENT

Set the contrast and brightness controls at maximum counter clockwise rotation.
Connect a 10KΩ carbon resistor to pin 1 of the Video AGC test jack and another 10KΩ resistor to pin 5 of same jack. Connect the free ends of the 10KΩ resistors together and attach the negative lead of a 7.5 volt bias battery to their junction.
Connect the positive lead of the battery to chassis.
The IF shield must be in place during alignment.
In step 10 the sweep generator output lead should oe terminated in its characteristic impedance, usually 50 ohms. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over converter tube, V2. Low side to chassis.	Not used	39.75MC (400∿ Mod)	4	Vert. amp. thru 15KΩ to point ◇A (pin 2 of Video AGC test jack). Low side to chassis.	A1	Adjust for MINIMUM 400∿ indication.
2.	"	"	"	47.25MC	"	"	A2	"
3.	"	"	"	41.25MC	"	"	A3	"
4.	"	"	"	42.7MC	"	"	A4	Adjust for maximum 400∿ indication. Attenuate generator to maintain .6 volt peak to peak indication on scope.
5.	"	"	"	45.4MC	"	"	A5	"
6.	"	"	"	42.0MC	"	"	A6	"
7.	"	"	"	45.0MC	"	"	A7	"
8.	"	"	"	44.4MC	"	"	A8	"
9.	"	"	"	43.0MC	"	"	A9	"
10.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	69MC (10MC Swp)	67.25MC	"	"		Loosely couple a separate marker generator to the mixer grid test point on top of tuner. Set generator to 45.75MC. Adjust the fine tuning control to zero beat the two markers. as observed on scope. Remove the separate marker generator.
11.	"	"	"	67.25MC 70.75MC	"	"		Check for response curve as in fig. 1. If necessary retouch A4, A5, A7, A8, A9 for desired response. A8 affects the tilt of the curve. A9 affects the dip. A4 affects the slope at 70.75MC, A5 and A7 affect the position of the 67.25MC marker.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from Point ◇B to chassis. The junction these two resistors is alignment Point ◇D as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
12.	2200Ω Carbon Resistor	High side to point ◇A Low side to chassis.	4.5MC Unmod.	Any non-interfering chassis.	DC probe to point ◇B Common to chassis.	A10, A11, A12, A13	Adjust for maximum deflection. Attenuate generator output to maintain not more that 10 volts at VTVM
13.	"	"	"	"	DC probe to point ◇C Common to point ◇D	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	2200Ω Carbon Resistor	High side to point ◇A Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any non-interfering channel.	Vert. amp. to point ◇B Low side to chassis.	A10, A11, A12, A13	Disconnect stabilizer capacitor C7. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
13.	"	"	"	"	"	Vert. amp to point ◇C Low side to chassis.	A14	Reconnect capacitor C7. Adjust so that 4.5MC occurs at center of crossover lines as in fig. 3 SLIGHTLY retouch A13 for maximum amplitude and straightness of crossover lines.

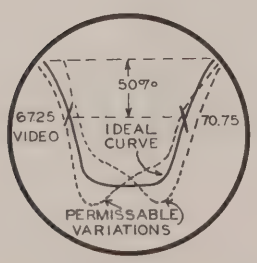


FIG.1

FIG. 2

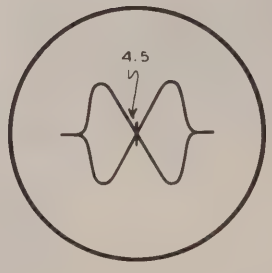


FIG. 3

PROPERTY OF

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control at the middle of its range (with the cam stop opposite the channel 8 oscillator tuning core).
Connect the negative lead of a 1.5 volt bias battery to the white lead on the top of the tuner. Connect the positive lead to chassis. Remove the gate pulse plug from its socket.
Couple the 45.75MC output of a signal generator to the first video IF Tube V3 by removing the tube shield and attaching the output leads of the generator to the ends of a few turns of wire wrapped around the tube. The output is set at 45.75MC throughout the entire oscillator alignment.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	Not used	211.25MC	13	Vert. amp. thru 15KΩ to point (A). Low side to chassis.	A15	Adjust for zero beat with 45.75MC IF signal as indicated on scope.
				205.25MC	12		A16	
				199.25MC	11		A17	
				193.25MC	10		A18	
				187.25MC	9		A19	
				181.25MC	8		A20	
				175.25MC	7		A21	
				83.25MC	6		A22	
				77.25MC	5		A23	
				67.25MC	4		A24	
				61.25MC	3		A25	
				55.25MC	2		A26	

RF AND MIXER ALIGNMENT

Leave 1.5 volt bias battery connected as under Oscillator Alignment.
Disconnect the tuner coupling link at the IF terminal strip and solder a 68 ohm carbon resistor ot the open end of the link.
Remove the first IF tube, V3, from its socket.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	213MC	13	Vert. amp thru 100KΩ to point (E) Low side to chassis.	A27, A28, A29	Adjust A27 and A28 for a symmetrical, approximately centered band pass. Detune A28 counter clockwise until a single peak appears. Adjust A27 until peak falls at 213MC. Adjust A29 for maximum curve height and symmetry of peak. (On late productions tuners A29 is omitted).
16.	"	"	"	"	"	"		Readjust A27 and A28 for symmetrical response as in fig. 4.
17.	"	"	177MC (10MC Swp)	177MC	7	"	A30, A31	Check for response as indicated by dotted line curves in fig. 5A and 5B. If response is not symmetrical and centered about 177MC, adjust A30 and A31 for mirror image of original response curve. This adjustment over compensates to allow for channel 13 adjustments in next step.
18.	Repeat steps 16 and 17 until centered and symmetrical response curves are obtained on channels 13 and 7.							
19.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	85MC (10MC Swp)	85MC	6	Vert. amp thru 100KΩ to point (E) Low side to chassis.	A32, A33 A34	Adjust A32 and A33 for a symmetrical, approximately centered band pass. Detune A33 counter clockwise until a single peak appears Adjust A32 until peak falls at 85MC. Adjust A34 for maximum curve height and symmetry of peak.
20	"	"	"	"	"	"		Readjust A32 and A33 for symmetrical response as in fig. 4.
21.	"	"	57MC (10MC Swp)	57MC	2 "	"	A35	Adjust for symmetrical, spproximately centered pass band as in fig. 4.

4.5MC TRAP ALIGNMENT

Turn the set on and tune in a TV test pattern.
Adjust A36 for maximum vertical wedge definition.

VIDEO OUTPUT PEAKING COIL ADJUSTMENTS

In case of excessive overshoot or smear on some stations it may be necessary to adjust A37 and A38. Alignment of the tuner and IF portions of the receiver must be correct before these adjustments are made. Proper adjustment point is the one of least smear on trailing whites.
After adjusting A37 and A38 check other channels to see that they have not been seriously affected.

FIG.4

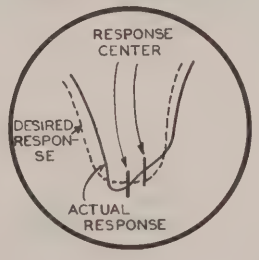


FIG.5A

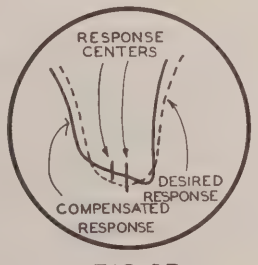


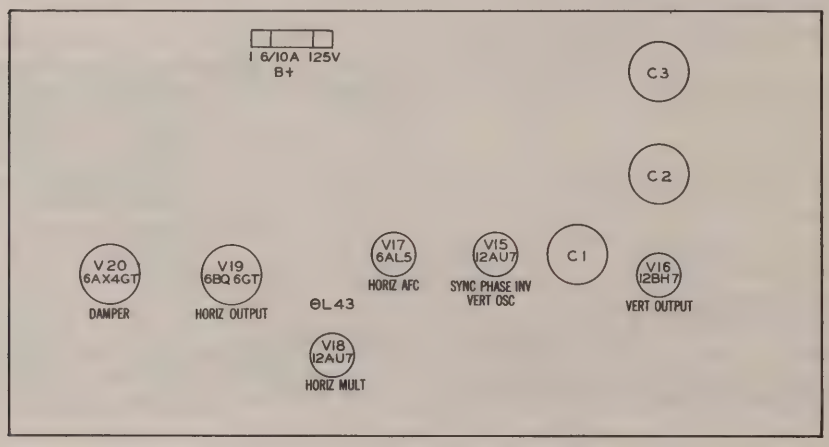
FIG.5B

PHILCO MODELS 53-T853, L, 53-T2127, 53-T2266, 53-T2268, 53-T2269, 53-T2270, 53-T2271, 53-T2273C, M (Code 126) (Ch. J-1, 91)

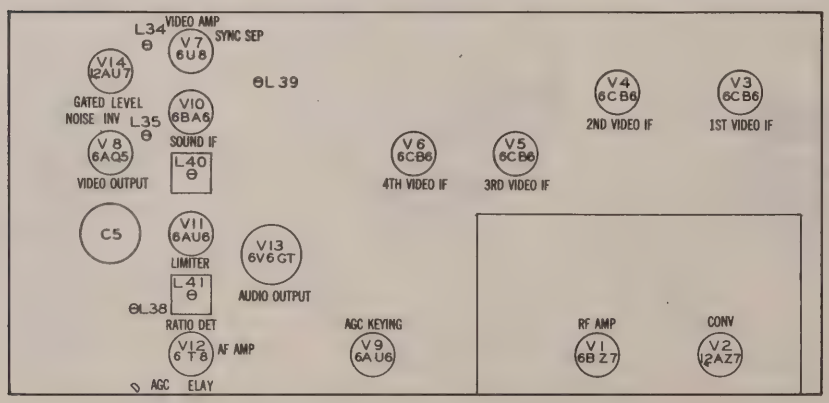
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BZ7	†1KΩ	1.1Meg	INF	0Ω	.1Ω	INF	580KΩ	0Ω	0Ω
V 2	12AZ7	†16KΩ	100KΩ	0Ω	.1Ω	.1Ω	†15KΩ	10KΩ	0Ω	0Ω
V 3	6CB6	85KΩ	68Ω	.1Ω	0Ω	†2.4KΩ	†2.4KΩ	0Ω		
V 4	6CB6	42KΩ	68Ω	.1Ω	0Ω	†2.4KΩ	†2.4KΩ	0Ω		
V 5	6CB6	.1Ω	150Ω	.1Ω	0Ω	†7.6KΩ	†7.6KΩ	0Ω		
V 6	6CB6	.1Ω	150Ω	.1Ω	0Ω	†2.2KΩ	†2.2KΩ	0Ω		
V 7	6U8	37KΩ	3.3KΩ	■4.7KΩ	0Ω	.1Ω	■8KΩ	33Ω	0Ω	2.7 Meg
V 8	6AQ5	610KΩ	500Ω	.1Ω	0Ω	†2.5KΩ	†0Ω	610KΩ		
V 9	6AU6	■51KΩ	22KΩ	.1Ω	0Ω	150KΩ	†10KΩ	22KΩ		
V 10	6BA6	500KΩ	■100Ω	.1Ω	0Ω	†220Ω	†220Ω	■100Ω		
V 11	6AU6	100KΩ	0Ω	.1Ω	0Ω	†8.5KΩ	†8.5KΩ	0Ω		
V 12	6T8	INF	33KΩ	INF	.1Ω	0Ω	510KΩ	0Ω	10Meg	†270KΩ
V 13	6V6GT	INF	.1Ω	†525Ω	†4.7KΩ	465KΩ	†0Ω	0Ω	120Ω	
V 14	12AU7	22 Meg	47KΩ	0Ω	0Ω	0Ω	160KΩ	22 Meg	3.3KΩ	.1Ω
V 15	12AU7	#1.5Meg	290KΩ	0Ω	0Ω	0Ω	†14KΩ	1 Meg	2.2KΩ	.1Ω
V 16	12BH7	#8.8KΩ	1.9Meg	47Ω	0Ω	0Ω	#8.8KΩ	1.9Meg	47Ω	.1Ω
V 17	6AL5	4.8Meg	4.8Meg	0Ω	.1Ω	15KΩ	INF	15KΩ		
V 18	12AU7	†57KΩ	110KΩ	1.2KΩ	.1Ω	.1Ω	†25KΩ	6.9Meg	1.2KΩ	0Ω
V 19	6BQ6GT	1.2Meg	0Ω	INF	†7KΩ	450KΩ	47KΩ	.1Ω	0Ω	Top Cap #32Ω
V 20	6AX4GT	†0Ω	INF	40KΩ	INF	†2Ω	#46Ω	0Ω	.1Ω	
V 21	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #832Ω
V 22	21EP4A	0Ω	470KΩ	Pin 10 #7.8KΩ	Pin 11 190KΩ	Pin 12 .1Ω				

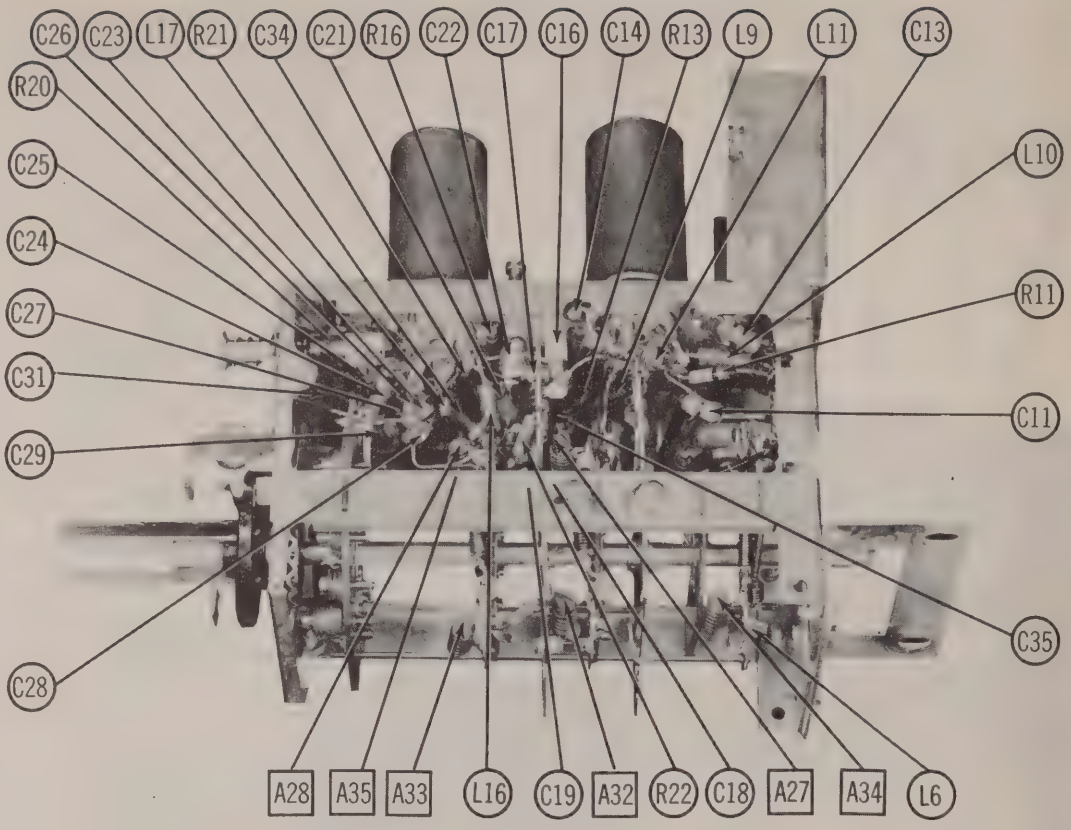
ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM OUTPUT OF M1
# MEASURED FROM PIN 3 OF V20
■ MEASURED FROM PIN S 2 & 7 OF V9



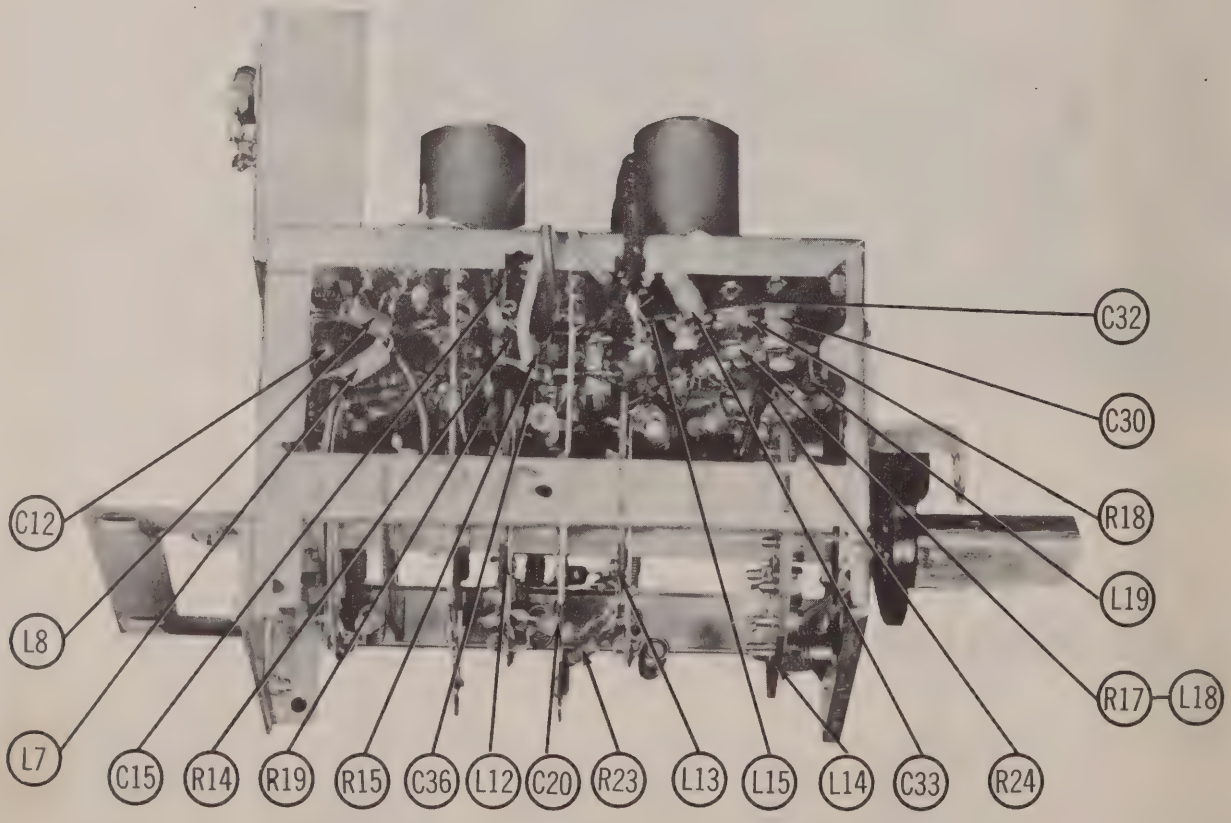
BOTTOM VIEWS



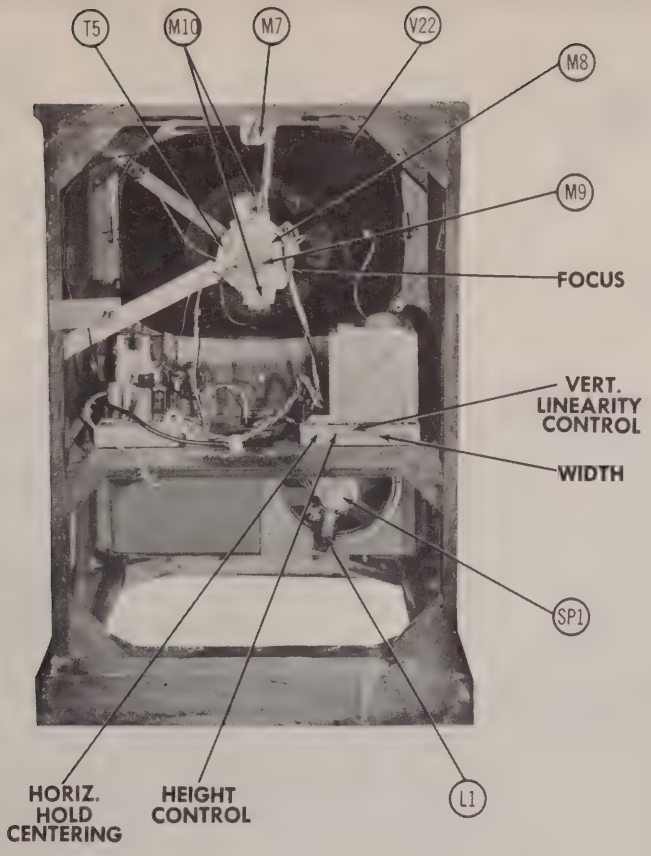
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Reduce the picture width until approximately one inch of blank screen appears on each side of the picture.

Increase the brightness control setting until the blanking time becomes visible as indicated by a dark bar at each side of the picture.

Connect a .1MFD capacitor from pin 2 of the gate pulse socket to ground.

Set the horizontal hold control at the center of its range.

Adjust the horizontal hold centering control until the picture is centered between the two blanking bars.

Remove the .1MFD capacitor.

Adjust the horizontal ringing coil slug (B1) until picture is again centered between the blanking bars.

Rotate the horizontal hold control through its range.

The picture should lose sync on both extremes of the rotation. If it does not, readjust the horizontal hold centering until that condition is met.

Check the number of diagonal bars on either side of the pull-in range of the horizontal hold.

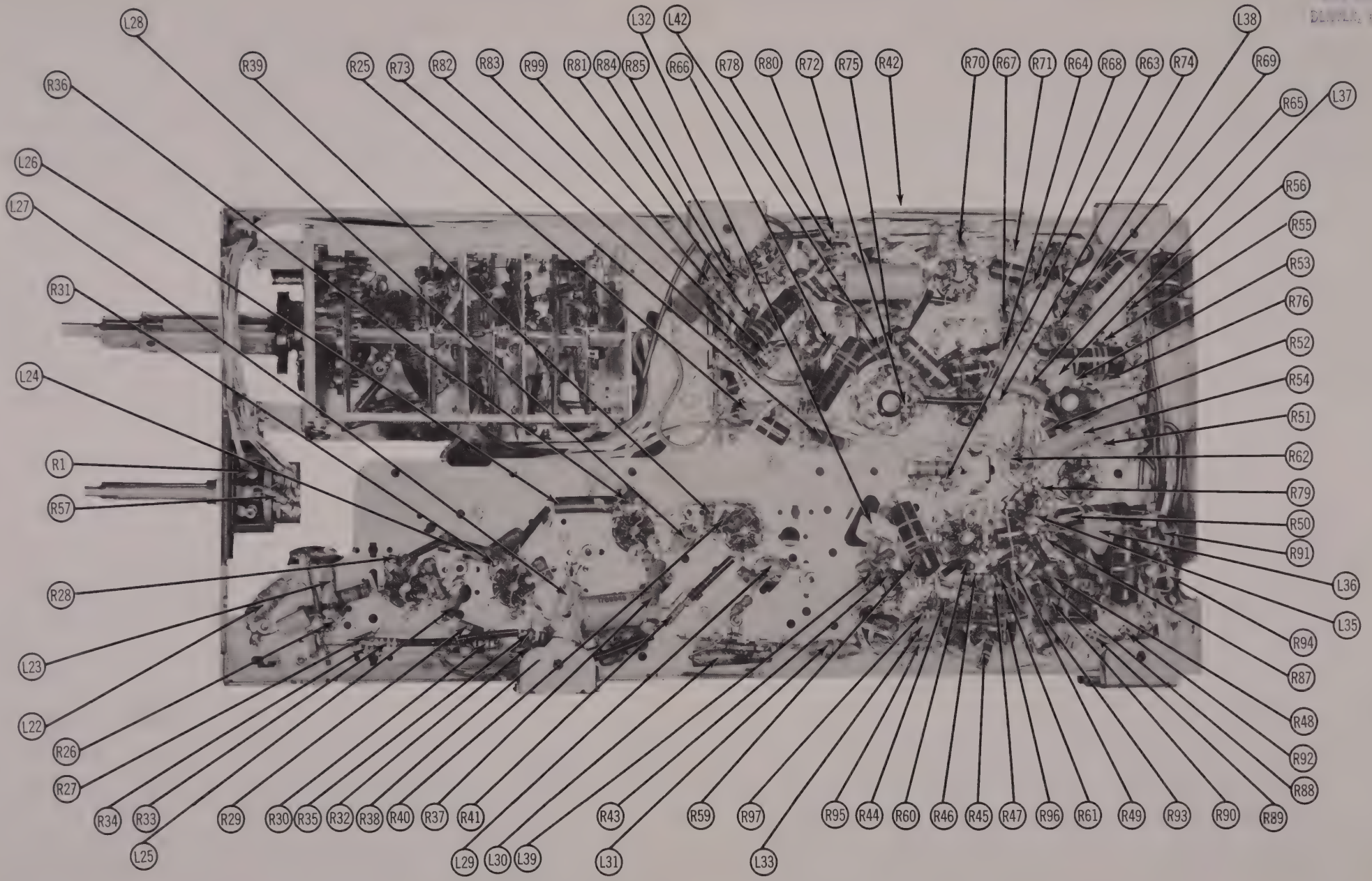
There should be 1 or 2 bars present at pull-in.

If proper pull-in is not obtained, repeat above procedure.

DISASSEMBLY INSTRUCTIONS

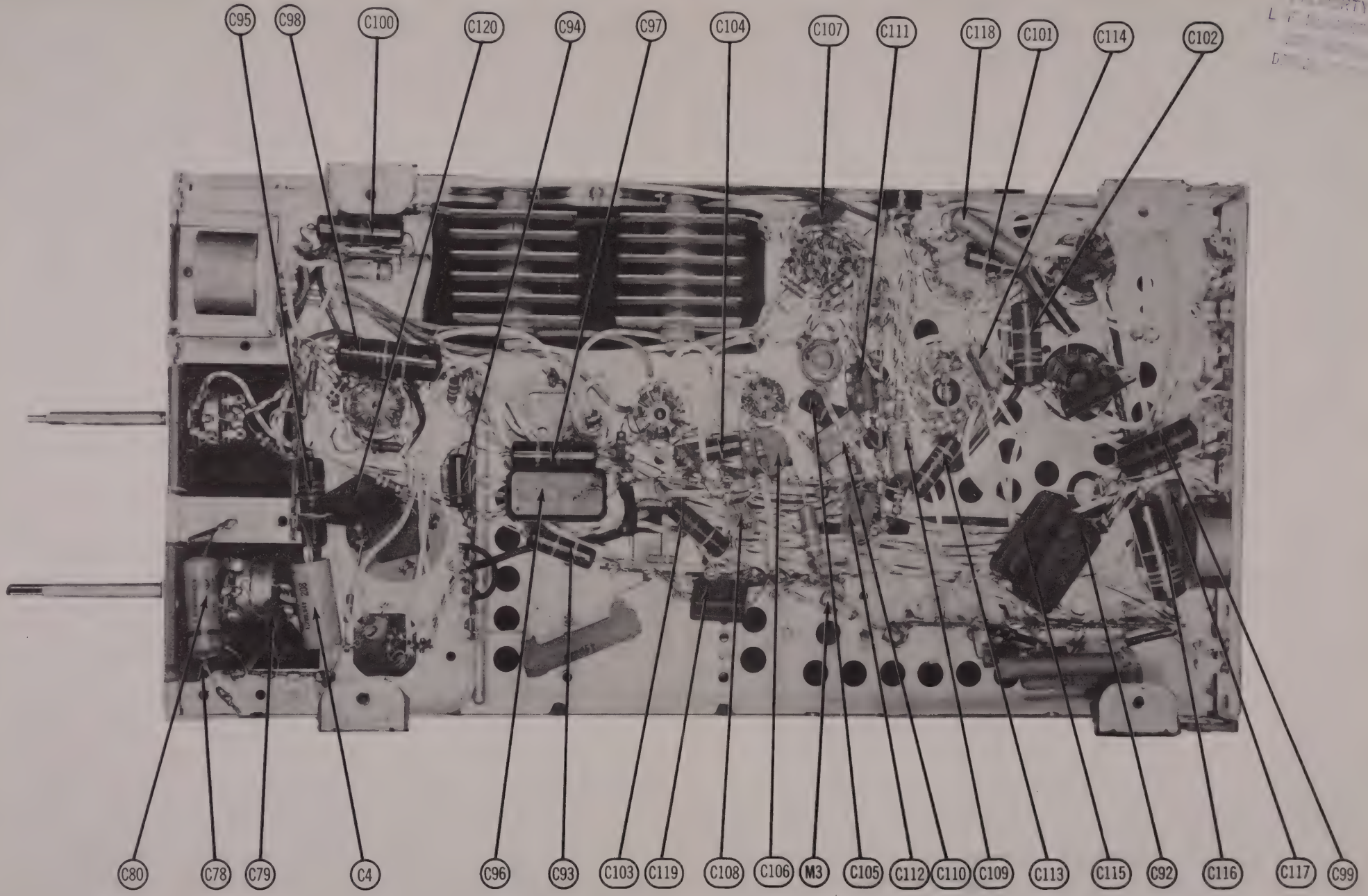
1. Remove 8 push on type control knobs from front panel.
2. Disconnect built-in antenna & tuner input leads from rear cover.
3. Remove 12 wood screws. Remove rear cover.
4. Disconnect speaker, Volume control, Interconnection cable, deflection and focus plug, HV lead, AGC plug & CRT socket.
5. Remove 8 chassis bolts. Remove RF-IF and Sweep Chassis.
6. Remove 4 speaker nuts. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.



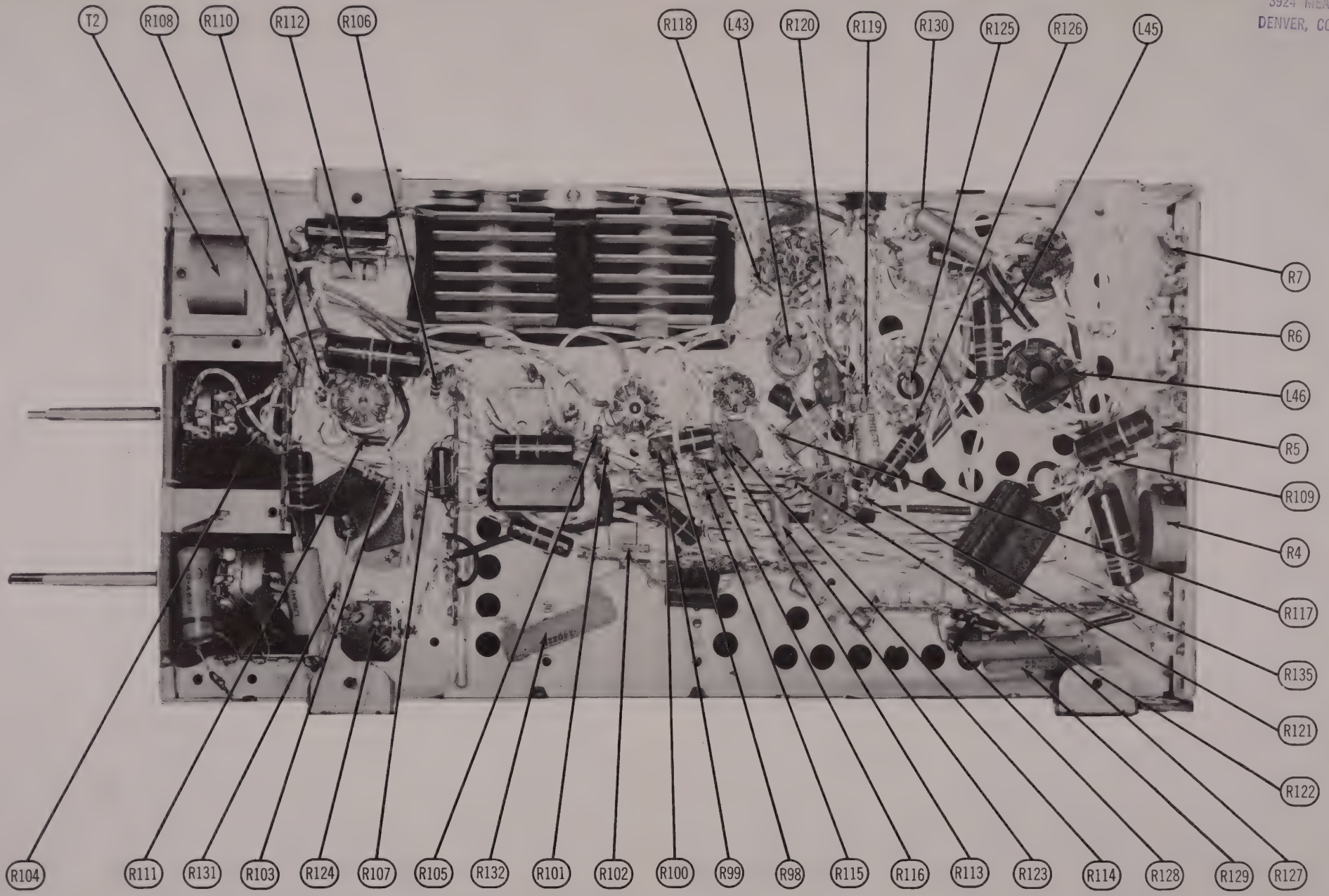
RF-IF CHASSIS-BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PROPERTY OF



SWEEP CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

3924 MEADE ST.
DENVER, COLORADO



SWEEP CHASSIS-BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		PHILCO PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BZ7	6BZ7	9AJ	
V2	Converter	12AZ7	12AZ7	9A	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	4th. Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Amplifier - Sync Separator	6U8	6U8	9-AE	
V8	Video Output	6AQ5	6AQ5	7BZ	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	1st. Sound IF Amp.	6BA6	6BA6	7BK	
V11	Limiter	6AU6	6AU6	7BK	
V12	Ratio Detector - AF Amplifier - AGC Delay	6T8	6T8	9E	
V13	Audio Output	6V6GT	6V6GT	7AC	
V14	Gated Level-Noise Inverter	12AU7	12AU7	9A	
V15	Sync Phase Inv.- Vert. Oscillator	12AU7	12AU7	9A	
V16	Vert. Output	12BH7	12BH7	9A	
V17	Horiz. AFC	6AL5	6AL5	6BT	
V18	Horiz. Mult.	12AU7	12AU7	9A	
V19	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V20	Damper	6AX4GT	6AX4GT	4CG	
V21	HV Rectifier	1B3GT	1B3GT	3C	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA			RTMA BASE TYPE	NOTES
	PHILCO PART No.	SYLVANIA PART No.			
V22A	21EP4A	21EP4A		12D	① Circuit changes necessary
		21EP4 ①		12D	
		21FP4 ①		12C	
		21FP4A ①		12C	
B	17JP4			12D	
C	20DP4A			12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1	120	150	30-2570-66	E3A162		UPE15020		FP140	TVL-1428	
C2	120	150	30-2570-66	E3A162		UPE15020		FP140	TVL-1428	
C3A	■80	300	30-2584-20	AFH3-46		UPT84245		FP378	TVL-3792	
B	▲10	300								
C	▲40	475								
C4	10	25	30-2417-3	PRS250/12		BR102A		TC22	TVA-1204	
C5A	▲40	300	30-2570-57	AFH4-18		UPT421145		FP476	TVL-4840	
B	10	300								
C	▲10	300								
D	■20	300								
C6	2	50	30-2417-7	E26E6		BBR-2-50T		TC302	TVA-1301	
C7	2	50	30-2417-7	E26E6		BBR-2-50T		TC302	TVA-1301	
C8	470		30-1225-18	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C9	470		30-1225-18	SI470	D6-471	TM5T5	GP2K-471	UC-5347	5GA-T47	
C10	20		62-02030901l	SI20	D6-200		GP1K-200	ZT-542	5GA-Q2	
C11	39		62-03940901l	SI30	D6-390		GP1K-390	UC-5439	5GA-Q39	
C12	220		62-122001001	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C13	220		62-122001001	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C14	150		62-115001011	SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	
C15	10000		30-1238-2	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C16	.5-3		31-6520-3		829-3			CT565A		
C17	.5		30-1221-15							
C18	150		62-115001011	SI150	D6-150	TM5T15	GP2K-151	UC-5315	5GA-T15	
C19	3									Note 2
C20	5			SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C21	39		62-039409011	SI39	D6-390		GP1K-390	UC-5439	5GA-Q39	
C22	.5-3		31-6520-7		829-3			CT565A		
C23	1.5		30-1221-8	SI1.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C24	10		62-012300001	SI10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C25	5		30-1224-5	SI5N750	TCN-5		N750K-050	NT-555	5TCUB-V5	
C26	220		62-122001001	SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
C27	7.5		30-1224-8				NP0K-7R5			
C28	1-5		31-6520-11		829-6					
C29	1.5		30-1221-8	SI1.5NP0	TCZ-1.5		NP0K-1R5		5TCCB-V15	
C30	1-5		31-6520-11		829-6					
C31	7.5		30-1224-8				NP0K-7R5			
C32	680		62-168001001	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C33	680		62-168001001	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C34	200			SI200	D6-201	TM5T2	GP2K-201	UC-532	5GA-T2	
C35	150			SI150	D6-151	TM5T15	GP2K-151	UC-5315	5GA-T15	Note 1
C36	800			BPD-0008	DD-801	TM5T8	801-001	DC-521	5HK-D1	Note 1
C37	10	500	60-00105417	1469-00001		5R5Q1		MCB215	MS-41	
C38	1-5		31-6520-9		829-6					
C39	5		30-1224-5	SI5	TCZ-4.7		GP1K-050	ZT-555	5GA-V5	
C40	1-5		31-6520-9		829-6					
C41	1-5		31-6520-9		829-6					
C42	12				TCZ-12		NP0K-120			
C43	680		62-168001001	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C44	1-5		31-6520-9		829-6					
C45	1500			SI1500	D6-152	TM5D15	801-0015	UC-5215	5HK-D15	
C46	680		62-168001001	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C47	1-5		31-6520-9		829-6					

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C48	680		62-168001001	SI680	D6-681		GP2K-681	UC-5368	SGA-T68	
C49	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C50	1-5		31-6520-9		829-6					
C51	2000			SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2	
C52	2000			SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2	
C53	680		[illegible]	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C54	680		[illegible]	SI680	D6-681		GP2K-681	UC-5368	5GA-T68	
C55	1-5		31-6520-9		829-6					
C56	2000			SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2	
C57	2000			SI2000	D6-202	TM5D2	GP2-333-202	UC-522	5HK-D2	
C58	5		[illegible]	SI5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C59	33		62-033009001	SI33	D6-330		GP1K-330	UC-5433	5GA-Q33	
C60	27		[illegible]	SI27	D6-270		GP1K-270	UC-5427	5GA-Q27	
C61	33		[illegible]	SI33	D6-330		GP1K-330	UC-5433	5GA-Q33	
C62	.047	200		P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C63	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C64	.1	200		P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C65	.047	200		P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C66	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C67	2.2		30-1221-6		TCZ-2.2		NP0K-2R2		5TCCB-V22	
C68	18		62-018400021		TCZ-18		NP0A-180			
C69	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C70	.0015	400		P688-0015	D6-152	PTE6D15	GP2L-152	PT6215	6TM-D15	
C71	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C72	56		30-1234-25			N330L-560				
C73	.0022	400		P688-0022	D6-222	PTE6D22	GP2-333-222	PT6211	6TM-D22	
C74	330		62-133001001	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C75	330		[illegible]	SI330	D6-331		GP2K-331	UC-5333	5GA-T33	
C76	1500			SI1500	D6-152	TM5D15	801-0015	DC-5215	5HK-D15	
C77	.0022	400		P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C78	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C79	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C80	.03	400		P688-03		PTE6S3		PT613	6TM-S3	
C81	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C82	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C83	.0068	400		P688-0068	D6-682	PTE6D68	GP2-333-682		6TM-D68	
C84	.0068	1000	45-3505-91	P1688-0068		PTE16D68			MB-D68	
C85	1500			SI1500	D6-152	TM5D15	GP2L-152	UC-5215	5HK-D15	
C86	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C87	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C88	.1	200		P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C89	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C90	470			SI470	D6-471	5W5T5	GP2K-471	UC-5347	5GA-T47	Note 4
C91	.015	400		P488-015		PTE6S15			6TM-S15	
C92	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	Note 1
C93	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C94	.0022	400		P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	
C95	.033	200		P488-033		PTE4S3		PT4133	6TM-D3	
C96	.068	400		P488-068		PTE4S68			4TM-S68	
C97	.015	400		P488-015		PTE6S15			6TM-S15	
C98	.1	400		P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C99	.1	200		P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C100	.015	400		P488-015		PTE6S15			6TM-S15	
C101	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C102	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C103	.001	400		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C104	.001	400		P688-001	D6-102	PTE6D1	GP2L-102	PT621	6TM-D1	
C105	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C106	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C107	1000			BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C108	10000		30-1238-2	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C109	.0022	400		P688-0022		PTE6D22		PT6222	6TM-D22	
C110	82	500								Note 3
C111	390	500	60-10395417	1469-0004		5R5T4		MCB243	MS-34	
C112	390	500	60-10395417	1469-0004		5R5T4		MCB243	MS-34	
C113	.0047	600		P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C114	100	500	60-10105417	1468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C115	.047	400		P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C116	.047	600		P688-047		PTE6S47		PT6147	6TM-S47	
C117	.5	100		P288-5		PJ2P5		PT405	2TM-P5	Note 1
C118	56	2000	30-1243-5							Note 1
C119	.01	600		689ZGXY-01		PJ6S1		PT611	6TM-S1	Note 1
C120	.01	600		689ZGXY-01		PJ6S1		PT611	6TM-S1	Note 1

Note 1. Not used in all Models.
Note 2. Some Models use 1.2MMF in this application.
Note 3. Some Models use 100MMF in this application (Part #60-10105417)
Note 4. Some Models use 270MMF in this application (Part #30-1225-9)

CONTROLS

ITEM No.	RATING RESIST-ANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2500Ω	2	33-5563-51	*	RTV-359		WF252	Contrast-Wire Wound-Panel
B	100KΩ						UR15L	Brightness-Rear
R2A	50KΩ		33-5563-50	* *	RTV-358		UF54L	Horiz. Hold-Panel
B	250KΩ						UR254L	Vert. Hold-Rear
R3A	5 Meg		33-5563-44	QJ-340†	RTV-360			Tone-Panel
B	2 Meg							Volume & Switch Tap Ⓐ 1 Meg Rear
R4A	10KΩ	2	33-5546-41	W-10K	A43-10K			Width-Wire Wound
B	Shaft		Not Req.	Not Req.	FKS-1/4			Attach to R4A
R5A	5 Meg		33-5565-31	QJ-141	AG-85-8	AB-87	SU-67	Vert. Linearity
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	5 Meg		33-5565-31	QJ-141	AG-85-8	AB-87	SU-67	Height
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	250KΩ		33-5565-17	QJ-130	AG-55-8	AB-50	SU-46	Horiz. Hold Centering
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R7A
								Hum Balance-Note

* CONCENTRIKIT EQUIVALENT-KIT K-3, BASE ELEMENTS & SHAFTS W17-111 & P1-200 (Panel) B11-128 & R1-220 (Rear).
** CONCENTRIKIT EQUIVALENT-KIT K-3, BASE ELEMENTS & SHAFTS B11-123 & P1-200 (Panel) B11-130 & R1-216 (Rear).
† CONCENTRIKIT EQUIVALENT-KIT K-2, BASE ELEMENTS & SHAFTS B12-141 & P1-200 (Panel) B18-139X & R1-216 (rear) & SWITCH 76-1.

Note- Not used in all models.

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	NOTES
R9	1 Meg	½		BTS-1 Meg	
R10	1 Meg	½		BTS-1 Meg	
R11	10KΩ	½		BTS-10K	
R12	47Ω	½			Note 1
R13	1000Ω	½		BTS-1000	
R14	2.2Meg	½			
R15	2.2Meg	½			
R16	100KΩ	½		BTS-100K	
R17	12KΩ	½		BTS-12K	
R18	1000Ω	½		BTS-1000	
R19	1000Ω	½		BTS-1000	
R20	10KΩ	½		BTS-10K	
R21	15KΩ	1		BTA-15K	
R22	820Ω	½		BTS-820	Note 2
R23	8200Ω	½		BTS-8200	
R24	10Ω	½			
R25	15KΩ	1	66-3154340	BTA-15K	
R26	15KΩ	½		BTS-15K	
R27	15KΩ	½		BTS-15K	
R28	68Ω	½			
R29	220Ω	½		BTS-220	
R30	47KΩ	½		BTS-47K	
R31	68Ω	½			
R32	220Ω	½		BTS-220	
R33	47KΩ	½		BTS-47K	
R34	47KΩ	½		BTS-47K	
R35	39KΩ	½		BTS-39K	
R36	150Ω	½		BTS-150	
R37	5600Ω	1		BTA-5600	
R38	220Ω	½		BTS-220	
R39	8200Ω	½		BTS-8200	
R40	150Ω	½		BTS-150	
R41	220Ω	½		BTS-220	
R42	2000Ω	7	33-3448-7	1 3/4A-2000	
R43	3300Ω	½		BTS-3300	
R44	12KΩ	½		BTS-12K	
R45	33Ω	½			
R46	47KΩ	½		BTS-47K	
R47	4700Ω	½		BTS-4700	
R48	3300Ω	½		BTS-3300	
R49	47000Ω	½		BTS-47000	
R50	8200Ω	½		BTS-8200	
R51	1.5Meg	½		BTS-1.5Meg	
R52	1 Meg	½		BTS-1 Meg.	
R53	8200Ω	½		BTS-8200	
R54	2500Ω	7	33-1335-93	1 3/4A-2500	
R55	470KΩ	½		BTS-470K	
R56	180KΩ	½		BTS-180K	
R57	22KΩ	½		BTS-22K	
R58	470KΩ	1	66-4474340	BTA-470K	
R59	1 Meg	½		BTS-1 Meg	
R60	1 Meg	½		BTS-1 Meg	
R61	100Ω	½		BTS-100	
R62	220Ω	½		BTS-220	
R63	100KΩ	½		BTS-100K	
R64	22KΩ	½		BTS-22K	
R65	12KΩ	1	66-3124340	BTA-12K	
R66	10Ω	½			
R67	270Ω	½		BTS-270	
R68	22KΩ	½		BTS-22K	
R69	33KΩ	½		BTS-33K	
R70	10 Meg	½		BTS-10 Meg	
R71	15KΩ	½		BTS-15K	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA PHILCO PART No.	IRC PART No.	NOTES
R72	680KΩ	½		BTS-680K	
R73	120Ω	1	66-1124340	BTA-120	Note 1
R74	1.5Meg	½		BTS-1.5Meg	
R75	270KΩ	½		BTS-270K	
R76	4700Ω	½		BTS-4700	
R77	68KΩ	½		BTS-68K	
R78	560KΩ	½		BTS-560K	
R79	47KΩ	½		BTS-47K	
R80	10KΩ	½		BTS-10K	
R81	5.6Meg	½		BTS-5.6Meg	
R82	10KΩ	½		BTS-10K	
R83	470KΩ	½		BTS-470K	
R84	47KΩ	½		BTS-47K	
R85	330KΩ	½		BTS-330K	
R86	2200Ω	½		BTS-2200	
R87	47KΩ	½		BTS-47K	
R88	22 Meg	½		BTS-22Meg	
R89	3300Ω	½		BTS-3300	
R90	47KΩ	½		BTS-47K	
R91	33KΩ	½		BTS-33K	
R92	220KΩ	½		BTS-220K	
R93	470KΩ	½		BTS-470K	
R94	68KΩ	½		BTS-68K	Note 3
R95	2.7Meg	½		BTS-2.7Meg	
R96	150KΩ	½		BTS-150K	
R97	47KΩ	½		BTS-47K	
R98	1 Meg	½		BTS-1 Meg	
R99	2200Ω	½		BTS-2200	
R100	10KΩ	½		BTS-10K	
R101	3900Ω	½		BTS-3900	
R102	22KΩ	½		BTS-22K	
R103	4700Ω	½		BTS-4700	
R104	220KΩ	½		BTS-220K	
R105	56KΩ-5%	½		BTS-56K-5%	
R106	330KΩ	½		BTS-330K	
R107	5600Ω	½		BTS-5600	
R108	1 Meg	½		BTS- 1 Meg	
R109	1 Meg	½		BTS-1 Meg	
R110	47Ω	½			
R111	100Ω	½		BTS-100	
R112	100KΩ	1		BTA-100K	
R113	100KΩ	½		BTS-100K	
R114	100KΩ	½		BTS-100K	
R115	4.7Meg	½		BTS-4.7Meg	
R116	2.2Meg	½		BTS-2.2Meg	
R117	15KΩ	½		BTS-15K	
R118	1200Ω	½		BTS-1200	
R119	15KΩ	½		BTS-15K	
R120	56KΩ-5%	½		BTS-56K-5%	
R121	47KΩ	½		BTS-47K	
R122	10KΩ	½		BTS-10K	
R123	47KΩ	1	66-3474340	BTA-47K	
R124	10KΩ	½		BTS-10K	
R125	1 Meg	½		BTS-1 Meg	
R126	470KΩ	½		BTS-470K	
R127	3900Ω	7		1 3/4A-3900	
R128	22KΩ	2	66-3225340	BTB-22K	
R129	8200Ω	5	33-1335-108	1 3/4A-8000	Note 4
R130	27KΩ	½		BTS-27K	
R131	47KΩ	½		BTS-47K	
R132	5Ω	10	33-3448-5		
R133	.11Ω	½			Note 5
R134	2.7Ω	½	66-9274360		
R135	470Ω	½		BTS-470	

Note 1 Not used in all models.
Note 2 Some models use a 1000Ω resistor in this application.
Note 3 Some models use a 180KΩ resistor in this application.
Note 4 Some models use two 3900Ω (two watt) resistors in series in this application.
Note 5 Seventeen inches No. 24 wire.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC	6.3VAC			32-8574	P-6308 ①		FO-610 ①	
	Ⓐ 1.05A	Ⓐ 9.6A							

① Drill new mtg. holes

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	175Ω	310Ω	32-8431-8			TBO-4		Vert. Osc. Trans.
			32-8431-2 ①					
T3	883Ω	30Ω	32-8565					Horiz. Output Trans.
	tap Ⓐ	SEC. 2						
	250,53Ω	0Ω						
	83Ω							
T4	970Ω		32-8577	A-8113 ③	A-3036 ③	TSO-11 ④	A-99X ⑤⑥	Vert. Output Trans.
	tap Ⓐ		32-8577-1 ②					
	13Ω							
T5A	42Ω		32-9648		MDF-71⑦	TY-8 ⑦		Horiz. Deflection Coils
B	48Ω							Vert. Deflection Coils

① Alternate Vert. Osc. Trans.
② Alternate Vert. Output Trans.
③ Tie red and green leads together
④ Drill new mtg holes.
⑤ Drill one new mtg. hole
⑥ Tie red and black leads together
⑦ Use original deflection network.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T6	4.2KΩ	3.3Ω	525Ω	.75Ω	32-8582	A-3849	A-3019	RO-9 ①	S-5X ①	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA PHILCO PART No.	VIKING PART No.	QUAM PART No.	NOTES
SP1	10"	PM	3.3Ω	36-1646-6 ①	10J11	10A31	① Includes filter choke. Some models use an EM speaker in lieu of PM speaker and filter choke.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT 1000 ~(w)	REPLACEMENT DATA PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.290A	62Ω	1.5 Hy.		C-2326 ①	C-2996 ①	TR-1733 ①	C-17X ①

① Drill one new mtg. hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PHILCO PART No.	MERIT PART No.	IRC PART No.	NOTES
L2	Ant. Trans.	.8Ω	0Ω	32-4432-1			
L3	Ant. Trans.	.8Ω	0Ω	32-4432-1			
L4	IF Trap	0Ω		32-4552-1			Wound on 22MMF Capacitor
L5	FM Trap	0Ω		32-4550-3			
L6	Ant. Coils	0Ω		76-7610			
L7	Ant. Coil	0Ω		32-4550-5			
L8	Ant. Coil	0Ω		32-4550-6			
L9	Fil. Choke	0Ω		32-4550-1			
L10	Neutralizing Coil	1Ω		32-4551-1			
L11	RF Choke	0Ω		32-4550-9			
L12	RF Coils	0Ω		76-7608			
L13	Mixer Grid Coils	0Ω		76-7606			
L14	Osc. Coils	0Ω		76-7604			
L15	Fil. Choke	0Ω		32-4550-1			
L16	Neutralizing Coil	1Ω		32-4551-1			
L17	RF Choke	0Ω		32-4550-4			
L18	RF Coil	.4Ω		312-5151-6			
L19	IF Trap	.6Ω		312-5151-5			
L20	1st. Video IF	0Ω	0Ω	32-4548-23			
L21	47.25MC Trap	.5Ω		32-4548-15			
L22	41.25MC Trap	.6Ω		32-4112-31			
L23	RF Choke	.6Ω		32-4112-31			
L24	Fil. Choke	.1Ω		32-4112-15			
L25	2nd. Video IF	.1Ω	.1Ω	32-4548-24			
L26	Fil. Choke	.1Ω		32-4112-15			
L27	3rd. Video IF	.1Ω	.1Ω	32-4548-25			
L28	4th. Video IF	.1Ω	.1Ω	32-4548-26			
L29	5th. Video IF	.1Ω	.1Ω	32-4548-18			
L30	Series Peaking Coil	8.2Ω		32-4422-27		CL-1	10 Microhenries
L31	Series Peaking Coil	.1Ω		32-4143- 22			3 Microhenries
L32	Shunt Peaking Coil	17Ω		32-4480-5	TV-188		400 Microhenries
L33	Series Peaking Coil	4.6Ω		32-4480-9	TV-184		180 Microhenries
L34	4.5MC Trap	4.3Ω		32-4463-7	TV-151		
L35	Shunt Variable Peaking Coil	12.5Ω		32-4467-11			270-700 Microhenries
L36	Series Peaking Coil	5.5Ω		32-4480-4	TV-185		250 Microhenries
L37	Series Peaking Coil	4.6Ω		32-4480-9	TV-184		180 Microhenries
L38	Shunt Variable Peaking Coil	5.7Ω		32-4467-7			50-170 Microhenries
L39	1st. Sound IF	4.2Ω		32-4463-9	TV-151 *		
L40	2nd. Sound IF	2Ω	1.9Ω	32-4449A	TV-113		
L41	Ratio Det.	5Ω	.6ΩCT	32-4550-5	TV-115		Tertiary Winding - .7Ω
L42	Fil. Choke	.1Ω		32-4112-15			
L43	Horiz. Osc.	200Ω		32-4557	TV-163		
L44	RF Choke	2.2Ω		32-8565			Part of T3
L45	RF Choke	2Ω		32-4112-24			
L46	RF Choke	2Ω		32-4112-24			

* Enlarge mtg. hole.

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA PHILCO PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	NOTES
M1	.255A	34-8003-7	NH-5	6Q82	1023A	68350	
M2	.255A	34-8003-7	NH-5	6Q82	1023A	68350	

PHILCO MODELS 53-T1853, L, 53-T2127, 53-T2266, 53-T2268, 53-T2269, 53-T2270, 53-T2271, 53-T2273C, M (Code 126) (Ch. J-1, 91)

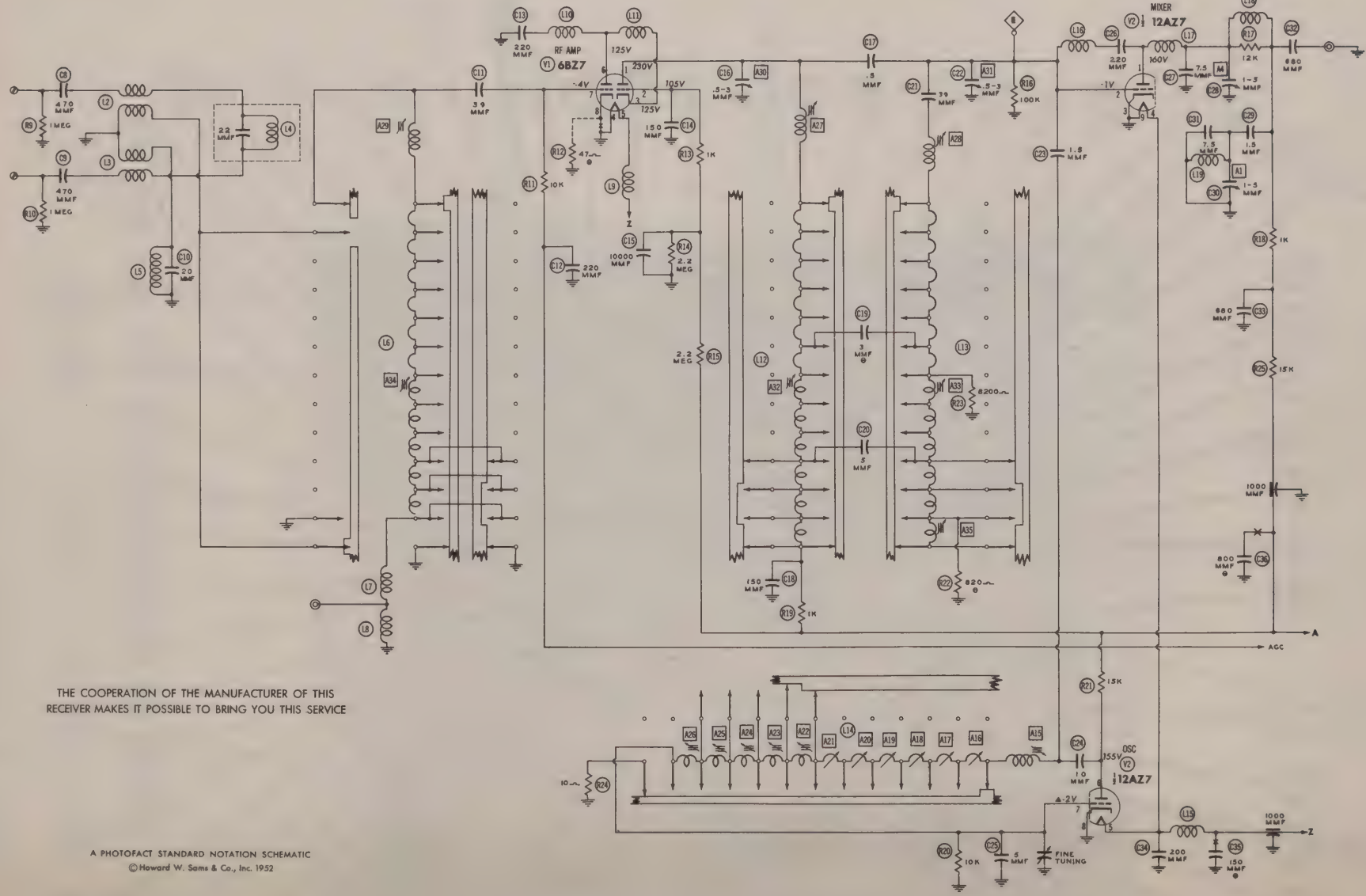
PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PHILCO PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M3	MDV	1 6/10A 125V.	45-2656-23		31501.6		MDV1 6/10	

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M5	RF Tuner	76-7600	
M6	Crystal		1N64
M7	Switch	42-1979	Built-in Ant. Selector
M8	Focus Magnet	76-6126-4	
M9	Ion Trap	76-6077-2	
M10	Magnets	76-6594	Anti-Pin Cushion Correction (2 Required)
	Knob	54-4799	Brightness, Vert. Hold & Off/On Volume
	Knob	54-4799-3	Brightness, Vert. Hold & Off/On Volume (Model 53-T1853L only)
	Knob	76-6863-12	Channel Selector
	Knob	76-6863-13	Channel Selector (Model 53-T1853L only)
	Knob	76-6048	Contrast, Horiz. Hold
	Knob	76-6048-1	Contrast, Horiz. Hold (Model 53-T1853L only)
	Knob	76-6104	Fine Tuning .
	Knob	76-6213	Tone
	Knob & Bracket Assembly	76-7710	Built-in Ant.
	Mask	54-8645-1	Models 53-T1853 & 53-T1853L
	Mask	54-8567-7	Model 53-T2127
	Mask	54-8573-11	Model 53-T2266
	Mask	54-8573-1	Models 53-T2268, 53-T2269, 53-T2270, 53-T2271, 53-T2273C & 53-T2273M
	Safety Glass	54-7943-54	Model 53-T1853
	Safety Glass	54-7943-57	Model 53-T1853L
	Safety Glass	54-7943-61	Model 53-T2127
	Safety Glass	54-7943-56	Model 53-T2266
	Safety Glass	54-7943-49	Models 53-T2268, 53-T2269, 53-T2270, 53-T2271, 53-T2273C & 53-T2273M
	Cabinet	10929-2	Console (Mahogany) Model 53-T1853
	Cabinet	10929-3	Console (Light) Model 53-T1853L
	Cabinet	10943-2	Table (Mahogany) Model 53-T2127
	Cab inet	10923	Console (Mahogany) Model 53-T2266
	Cabinet	10942	Console (Mahogany) Model 53-T2268
	Cabinet	10951	Console (Mahogany) Model 53-T2269
	Cabinet	10947	Console (Mahogany) Model 53-T2270
	Cabinet	10935	Console (Birch) Model 53-T2271
	Cabinet	10945-1	Console (Cherry) Model 53-T2273C
	Cabinet	10945	Console (Maple) Model 53-T2273M
	Cabinet Doors	45-6722	Matched (Mahogany) Model 53-T2268
	Cabinet Doors	45-6723	Matched (Mahogany) Model 53-T2269
	Cabinet Doors	45-6724	Matched (Mahogany) Model 53-T2270
	Cabinet Doors	45-6725	Matched (Birch) Model 53-T2271
	Cabinet Doors	45-6726	Matched (Cherry) Model 53-T2273C



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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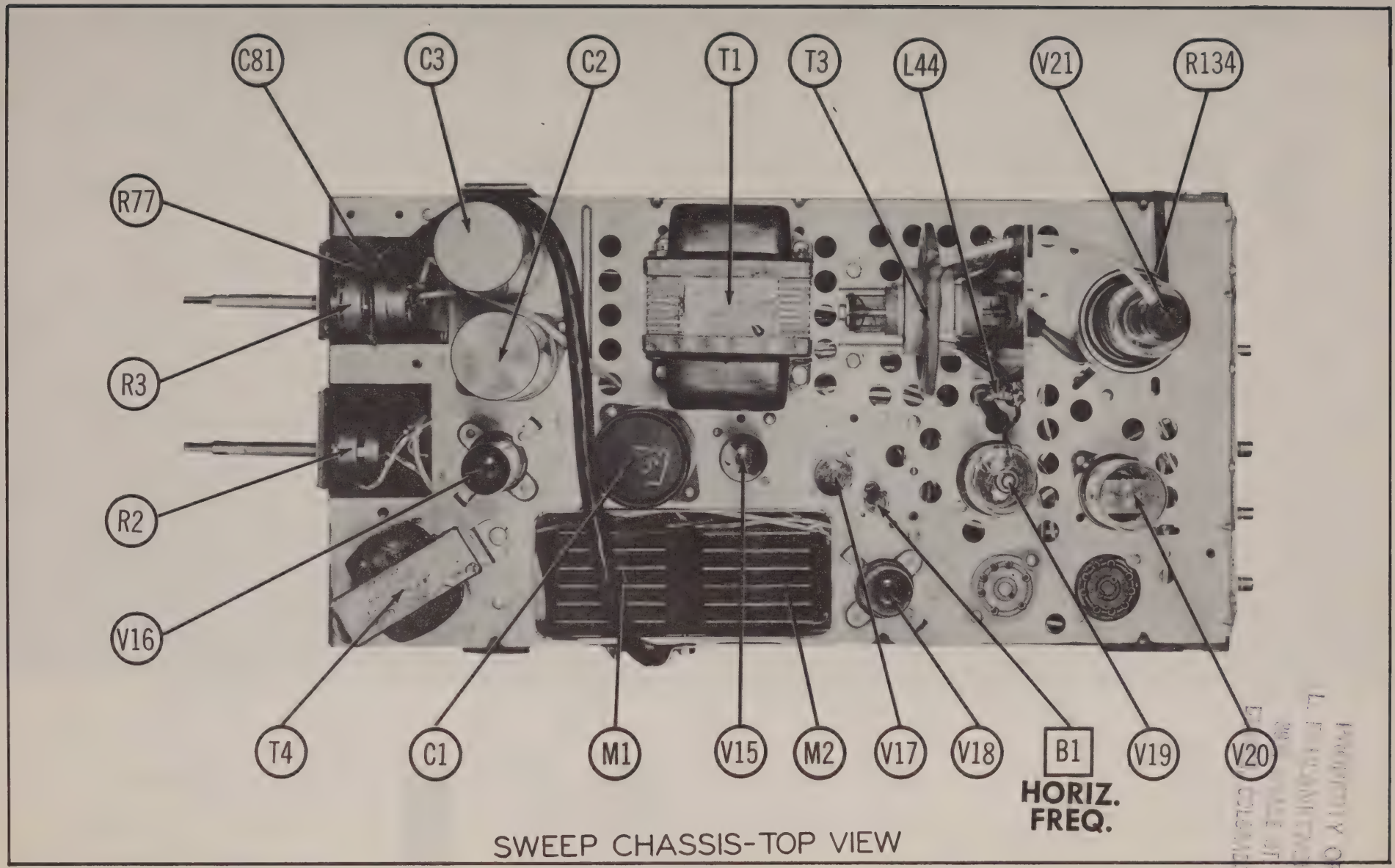
TUNER SCHEMATIC



SWEEP CHASSIS-TOP VIEW

PROPERTY OF
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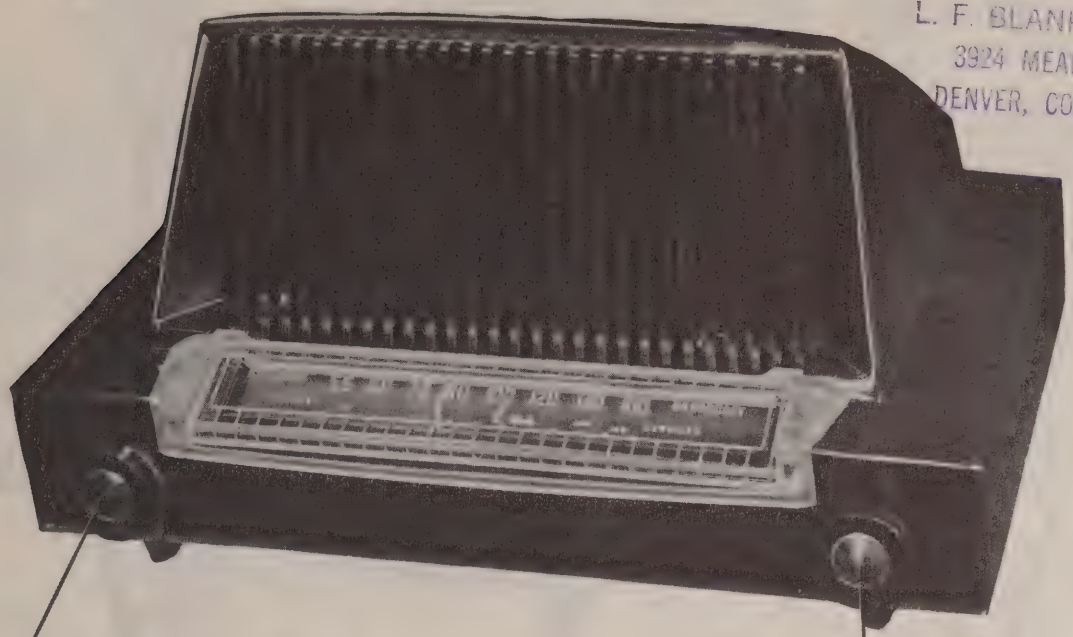
3924 MEADE ST.
DENVER, COLORADO

PHILCO
MODEL 53-566



PHILCO
MODEL 53-566

TRADE NAME	Philco Model 53-566
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	AC-DC Operated AM Superheterodyne Receiver
TUBES (FIVE)	Types 7A8 Conv. 7B7 IF Amp., 7C6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC/DC
RATING	.23 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC
SPECIAL SERVICE	1700-3400KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn tuning gang fully closed and set pointer to index mark at low frequency end of dial background.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 6 (grid) of 7A8 (V1). Low side to B-.	455KC (400~Mod)	BC	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1630KC	"	1630KC *	"	A5	* To set capacitor to the 1630KC position, turn all the way open, insert a .006 inch non-metalic shim between the heel of the rotor and the top of the stator plates. Close the tuning gang enough to hold shim in place, then remove shim without changeing the gang setting. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1500KC	"	1500KC	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		"	3200KC	Special Services	3200KC	"	A7	- Repeat steps 3 and 4.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

PHILCO MODEL 53-566

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Converter	7A8	7A8	8U	
V2	IF Amplifier	7B7	7B7	8V	
V3	Det.-AVC-AF Amp.	7C6	7C6	8W	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	40	150	30-2575-32	E58C36		EZ44135C		3N536	TVA-3451	
B	40	150						TC26	TVA-1205	
C	40	150								
D	25	25								
C2	5		30-1221-5	SI5	TCZ-4.7	5W5V5	GP1K-050		5GA-V5	
C3	743		60-10755311							
C4	.1	400	61-0113	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C5	47	500	600-00475417	1469-00005		5R5Q5			MS-45	
C6	7.5		30-1224-65							
C7	220	500		1468-00025	D6-251	5W5T25	GP2K-251		1FM-325	Note 1
C8	.1	400	61-0113	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C9	.05	200	61-0122	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C10	.1	400	45-3505-47	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C11	.01	400	45-3505-58	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C12A	.005									
B	250		♦30-6001		♦PC-70		♦1406-01		♦104C4	
C										
C13	.022	400	45-3505-43	P488-022	DF-203	PTE4S22		PT4122	4TM-S22	
C14	.047	400	30-1226-17	489ZGXY-05		PJ4S47		PT4147	4TM-S47	
C15	.1	400	45-3505-47	P488-1	DF-104	PTE4P1		PT401	4TM-P1	

Note 1 Not used in all models.

♦ Items C12A, C12B, C12C, R11A, R11B arecombined in one unit.
Wnen replacing items seperately, C12B and C12C should total 250MMF.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	33-5566-36	Q13-133	AG-60-Z	B-60-S	U-48	Volume
B	Shaft		Not Req.	442	FS-5	Not Req.	DS-36	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

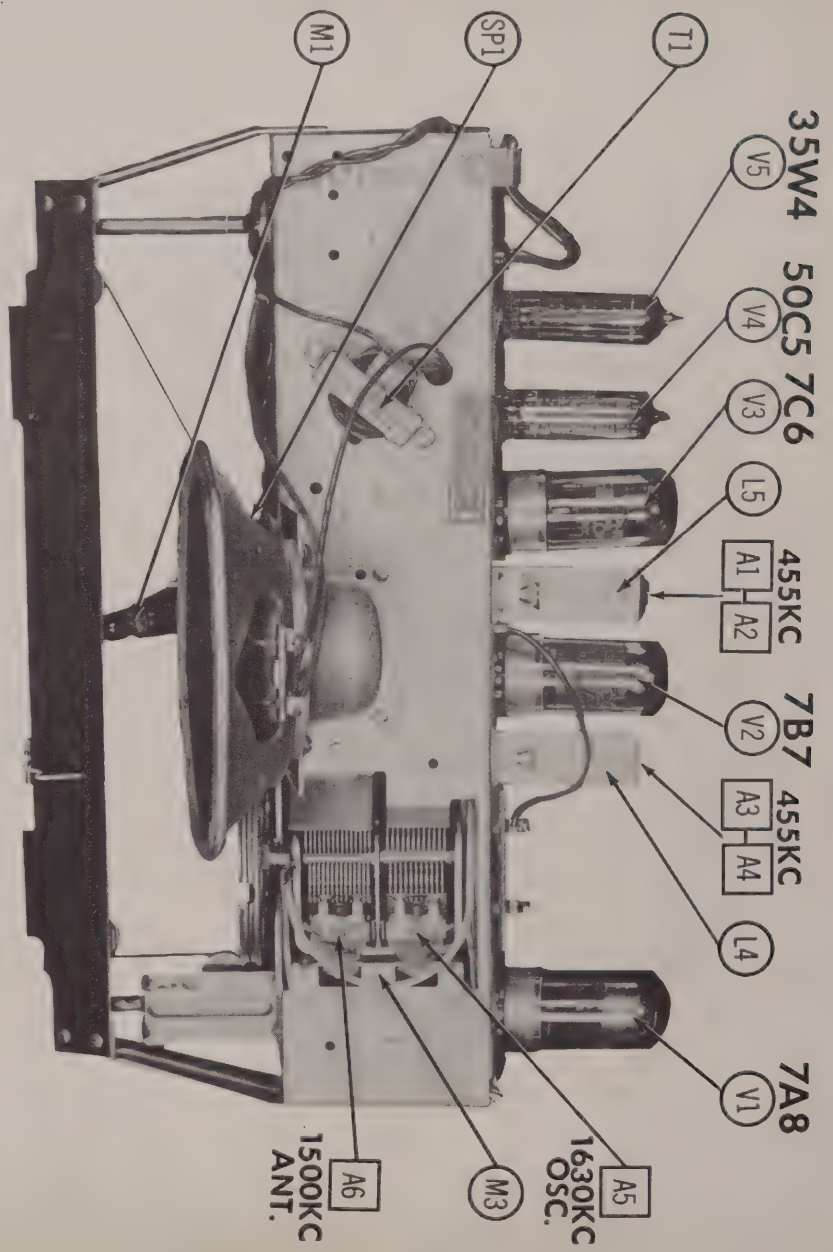
RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	150KΩ	½	66-4158340	BTS-150K	
R3	470KΩ	½	66-4478340	BTS-470K	
R4	150K	½	66-4158340	BTS-150K	
R5	100KΩ	½	66-4108340	BTS-100K	
R6	27KΩ	½	66-3278340	BTS-27K	
R7	180Ω	½	66-1188340	BTS-180	
R8	47KΩ	½	66-3478340	BTS-47K	
R9	2.2Meg	½	66-5228340	BTS-2.2Meg	
R10	10Meg	½	66-6108340	BTS-10 Meg	
R11A	500KΩ	½	♦30-6001		
B	500KΩ				
R12	150Ω	1	66-1154340	BTA-150	
R13	220Ω	2	66-1225340	BW-2-220	
R14	1200Ω	½	66-2128340	BTS-1200	
R15	*	*	33-1343-3		Note

♦ Items R11A, R11B, C12A, C12B, C12C are combinedin one unit.

* Special temperature conpensating resistor (880Ω cold, 100Ω hot).

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		PHILCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2.4KΩ	3.5Ω	220Ω	.6Ω	32-8384	A-3332	A-3025	RO-2 ①	S-1X	① Drill one new mtg. hole.

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	PHILCO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	5"	PM	3.5Ω	56-1639-9	ST-105 Mod. P5-X①	52A1 ②	① Fabricate new mtg. bracket. ② Use universal mounting bracket with speaker.

COILS (RF-IF)

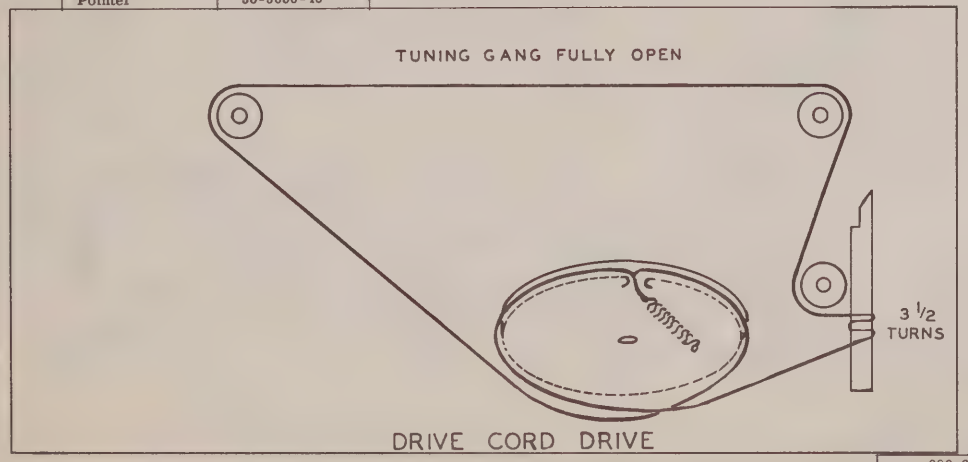
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	PHILCO PART No.	MERIT PART No.	
L1	Loop Ant.	.8Ω		32-4565-1		Tapped@ .4Ω
L2	SW Osc. Coil	3.2Ω		32-4263		
L3	BC Osc. Coil	2.6Ω	7Ω	32-4562-3		
L4	Input IF	12.5Ω	18Ω	32-4160A	BC-352	
L5	Output IF	17Ω	20Ω	32-4517A	BC-355	

DIAL LIGHTS

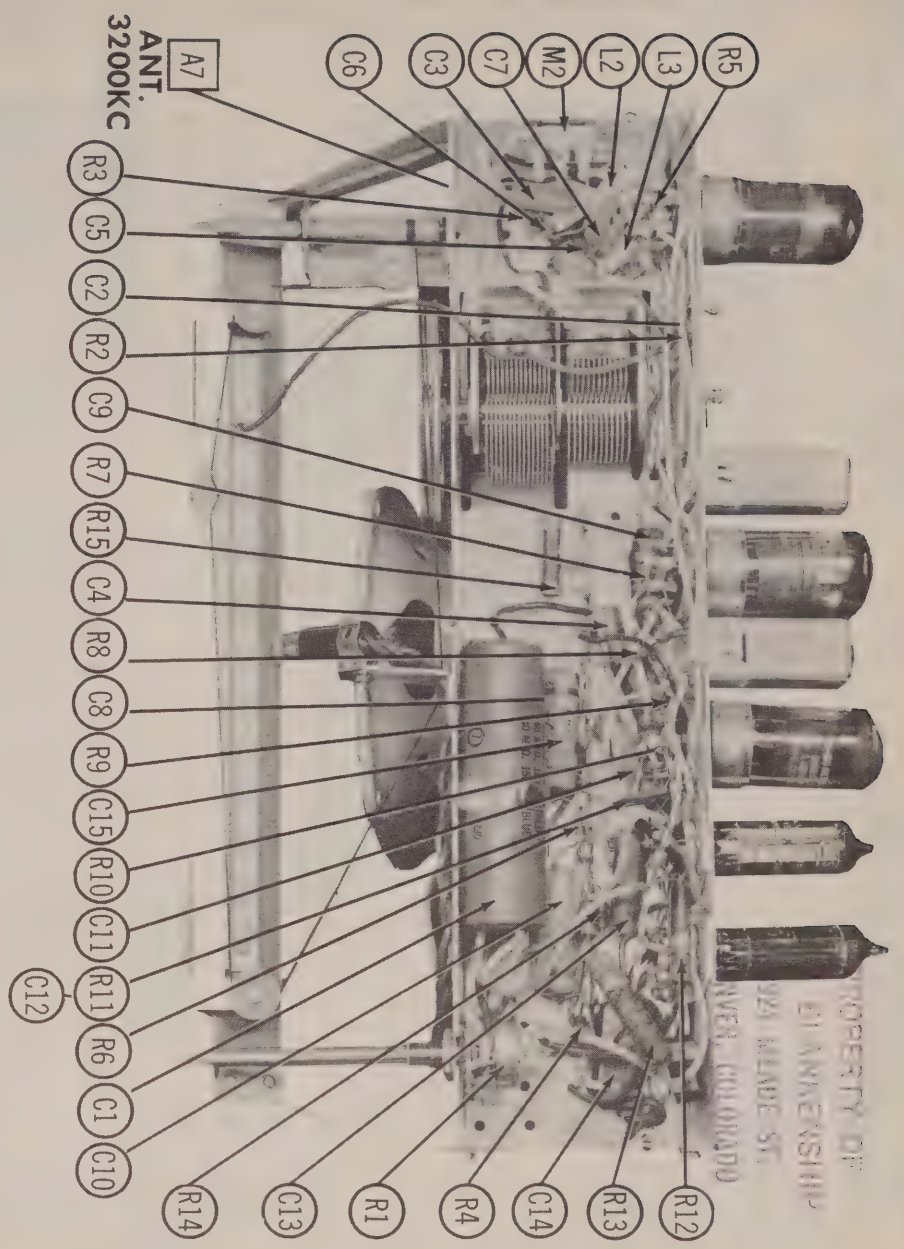
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					PHILCO PART No.		
M1	Bayonet	6-8	.25	Brown	34-2068		Type no. #47

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M2	Switch	42-1796-2	Band
M3	2 Gang Var. Cap.	31-2751-10	(35-497MMF, 8-175MMF)
A7	Trimmer	31-6473-30	Ant. Adj. (3-30MMF)
	Cabinet	10887-4	Mahogany
	Cabinet	10887-5	Ivory
	Knob	54-4774-9	Mahogany-2 used.
	Knob	54-4774-10	Ivory-2 used.
	Dial Scale	54-5128-2	
	Pointer	56-5630-40	



CHASSIS—BOTTOM VIEW



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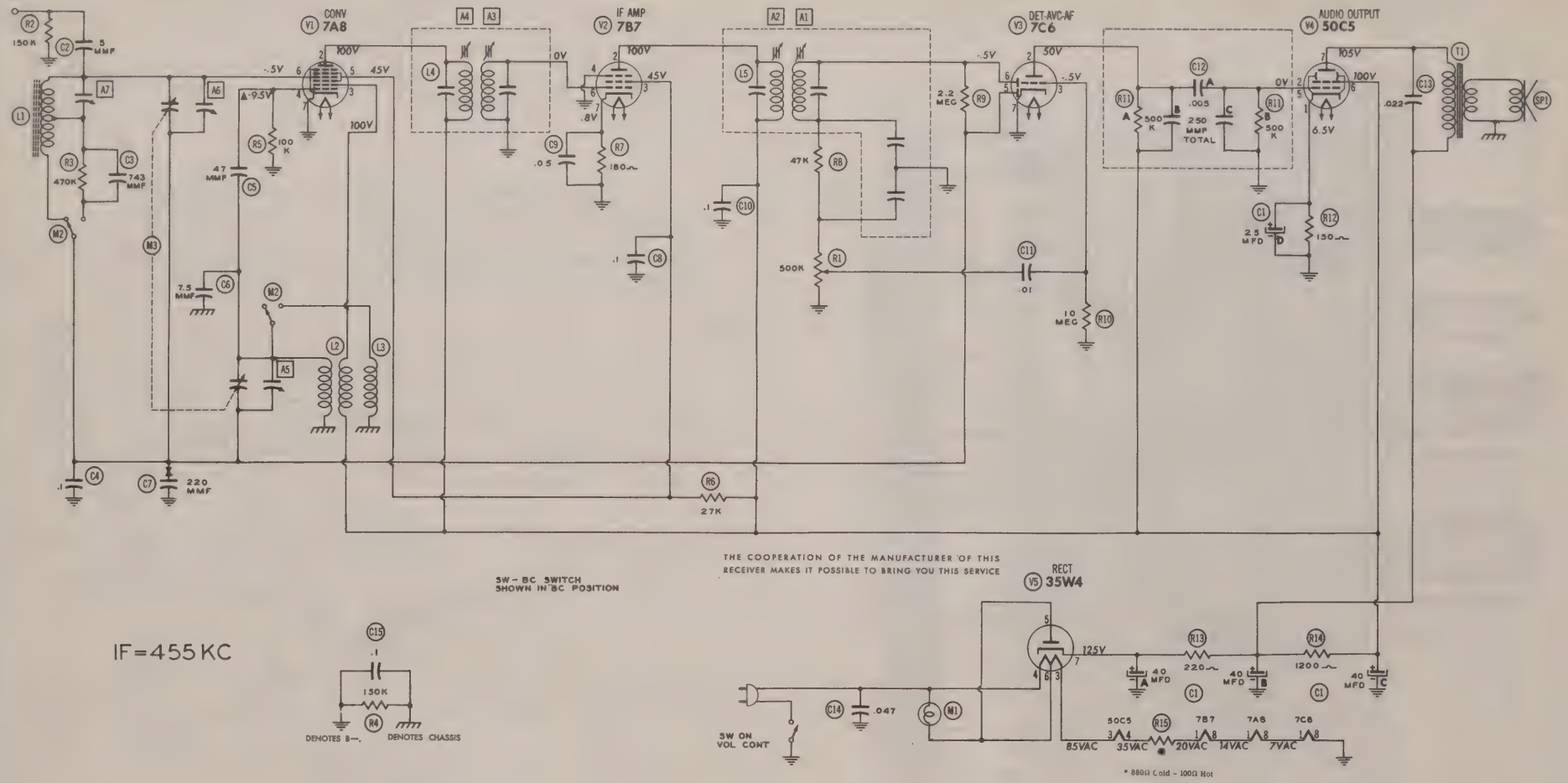

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	7A8	14Ω	†1.4KΩ	†1.4KΩ	100KΩ	†28KΩ	2.7Meg	0Ω	7Ω
V 2	7B7	21Ω	†1.4KΩ	†28KΩ	0Ω	0Ω	20Ω	180Ω	14Ω
V 3	7C6	7Ω	†500KΩ	10Meg	0Ω	2.7Meg	550KΩ	0Ω	0Ω
V 4	50C5	150Ω	500KΩ	171Ω	121Ω	500KΩ	†14KΩ	†440Ω	
V 5	35W4	0Ω	0Ω	171Ω	208Ω	188Ω	188Ω	50KΩ	

ALL MEASUREMENTS TAKEN IN BC POSITION
† MEASURED FROM PIN 7 OF V5

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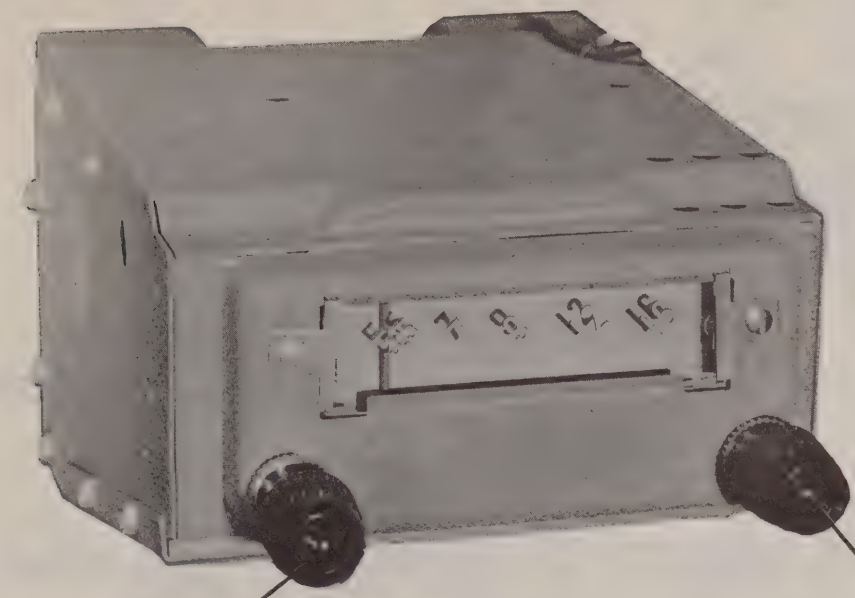
185-11

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE MODELS
6286 (Ch. 528.6286, -1, -3),
6287 (Ch. 528.6287, -1, -3)



SILVERTONE MODELS
6286 (Ch. 528.6286, -1, -3),
6287 (Ch. 528.6287, -1, -3)

TRADE NAME	Silvertone Models 6286 (Ch. 528.6286, -1, -3), 6287 (Ch. 528.6287, -1, -3)
SUPPLIER	Sears Roebuck & Co., 925 S. Homan, Chicago, Ill.
TYPE SET	Battery Operated Universal Automobile Superheterodyne Receiver
TUBES (Six)	Types 6BJ6 (or) 6BA6 RF Amp., 6BE6 Conv., 6BA6 IF Amp., 6AT6 (or) 6AV6 Det.-AVC-AF Amp., 6AQ5 Audio Output, 6X5GT Rectifier
POWER SUPPLY	6 Volt storage battery
RATING	5.5 Amp. @ 6.3 Volts DC
TUNING RANGE—BROADCAST	535-1605 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Turntuning gangfully closed and set pointer against pointer stop at low frequency end of dial.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 6BE6 (V2). Low side to chassis.	455 KC (400∿ Mod)	Tuning gang fully open	Across voice coil	A1, A2 A3, A4	Adjust for maximum output.
2.	Fig. 1	Thru dummy to antenna receptacle	1605 KC	"	"	A5	"
3.	"	"	1400 KC	Tune to 1400 KC signal	"	A6, A7	"
4.	"	"	600 KC	Tune to 600 KC signal	"	A8, A9	"
5.	Repeat adjustments of A7, A8 and A9 as above for optimum tracking at 600KC and 1400 KC .						

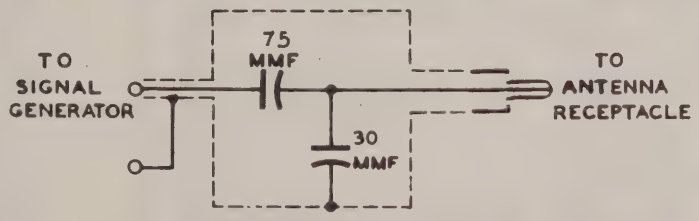


FIG. 1

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6BJ6	6BJ6	7CM	Used in Ch. 528.6286-3, 528.6287-2.
B	RF Amplifier	6BA6	6BA6	7BK	Used in Ch. 528.6286, -1, 528.6287, -1.
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	7BK	
V4A	Det-AVC-AF Amp.	6AT6	6AT6	7BT	
B	Det-AVC-AF Amp.	6AV6	6AV6	7BT	Alternate
V5	Audio Output	6AQ5	6AQ5	7BZ	
V6	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲20	250	18-303	AFH3-97		UP2230C				
B	■20	250								
C	20	25								
C2	100		15-196	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C3	.05	400	16-189	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C4	10000		15-211	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	Note 1
C5	12		15-205				N150K-120			
C6	.05	400	16-189	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C7	100		15-196	SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C8A	220			SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
B	.005			BPD-005	DD-502		811-005	DC-525	5HK-D5	
C	.005		17-103	BPD-005	DD-502		811-005	DC-525	5HK-D5	
D	220			SI220	D6-221		GP2K-221	UC-5322	5GA-T22	
E	.005			BPD-005	DD-502		811-005	DC-525	5HK-D5	
C9	.05	400	16-189	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C10	5000		16-177	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C11	.05	400	16-189	P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C12	.005	1600	16-185	P1688-005		PTE16D5		P1625	MB-D5	
C13	.5	100	16-215	P185-5		MP2P5			68P20	
C14	.5	100	16-215	P185-5		MP2P5			68P20	
C15	10000		15-211	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	Note 1
C16	5000		16-177	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C17	5000		16-177	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	

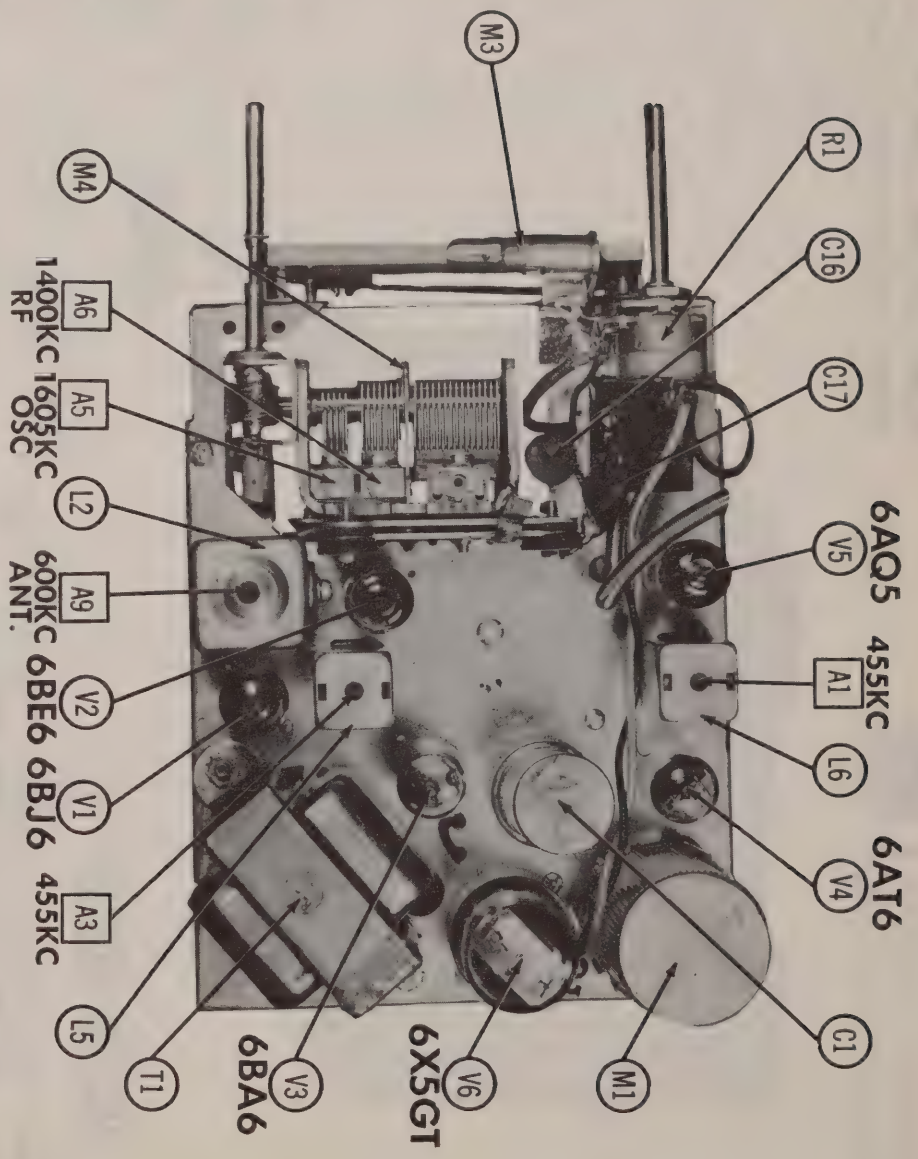
Note 1. Used in Ch. 528.6286-3 and 528.6287-3 only.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500KΩ	½	24-192	Q13-133	AG-60-Z	AB-60		Volume-Note
B	Shaft		Not Req.	NQ	RS-3"/16	AK-8		Attach to R1A
C	Switch		Not Req.	76-1	SWB	KB-1		Attach to R1A

Note Chassis No. 528.6287-3 uses alternate control (Part No. 24-193).

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SILVERTONE PART No.	IRC PART No.	
R2	150Ω	½	60-767	BTS-150	
R3	10KΩ	½	60-760	BTS-10K	
R4	1 Meg	½	60-688	BTS-1 Meg	
R5	22KΩ	½	60-744	BTS-22K	
R6	330KΩ	½	60-661	BTS-330K	
R7	220Ω	½	60-753	BTS-220	
R8	10 Meg	½	60-728	BTS-10 Meg	
R9	220KΩ	½	60-677	BTS-220K	
R10	100KΩ	½	60-727	BTS-100K	
R11	2.2Meg	½	60-726	BTS-2.2Meg	
R12	47KΩ	½	60-730	BTS-47K	
R13	15KΩ	1	60-716	BTA-15K	
R14	470KΩ	½	60-731	BTS-470K	
R15	270Ω	1	60-754	BTA-270	
R16	4700Ω	1	60-765	BTA-4700	
R17	470Ω	1	60-694	BTA-470	
R18	150Ω	½	60-767	BTS-150	

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	SEC. 3	SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	6.3VAC @ 5.5A	400VCT .055ADC			80-271				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T2	4.35KΩ	3Ω	350Ω	.75Ω	80-272	A-3877	A-2930	RO-9	S-5X	

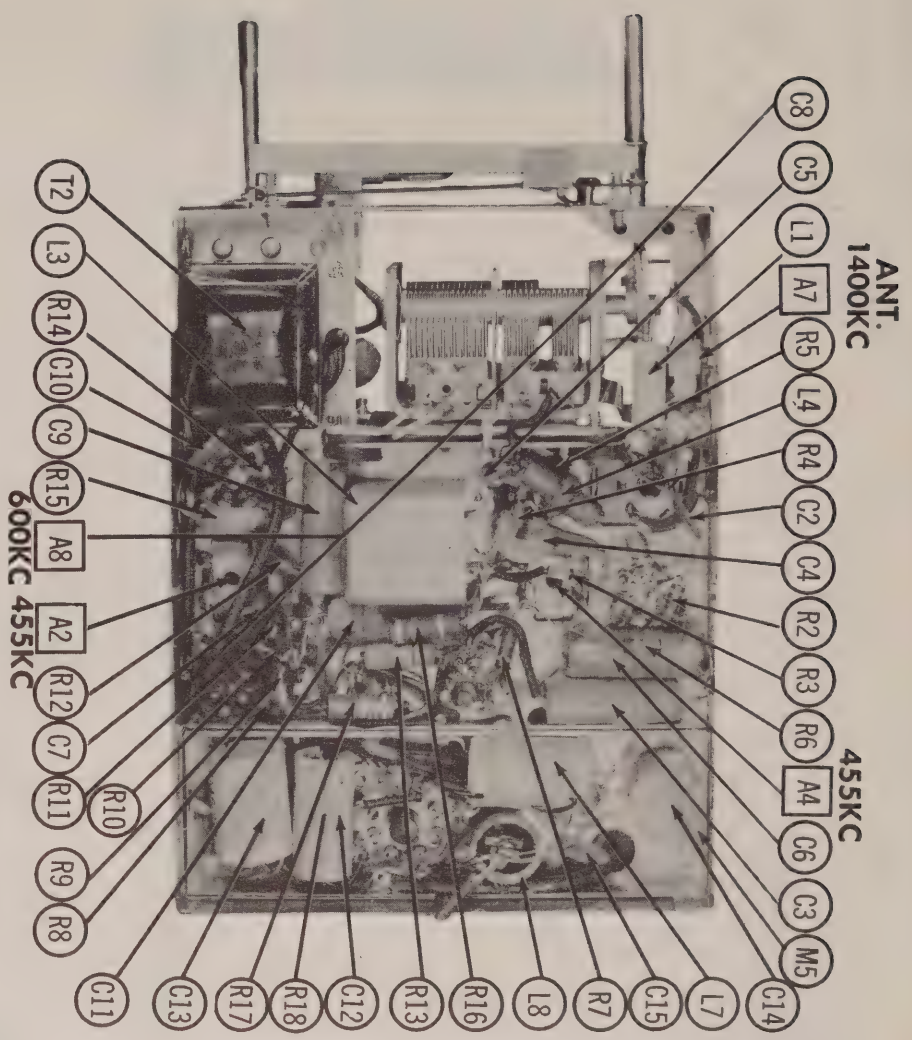
SPEAKER

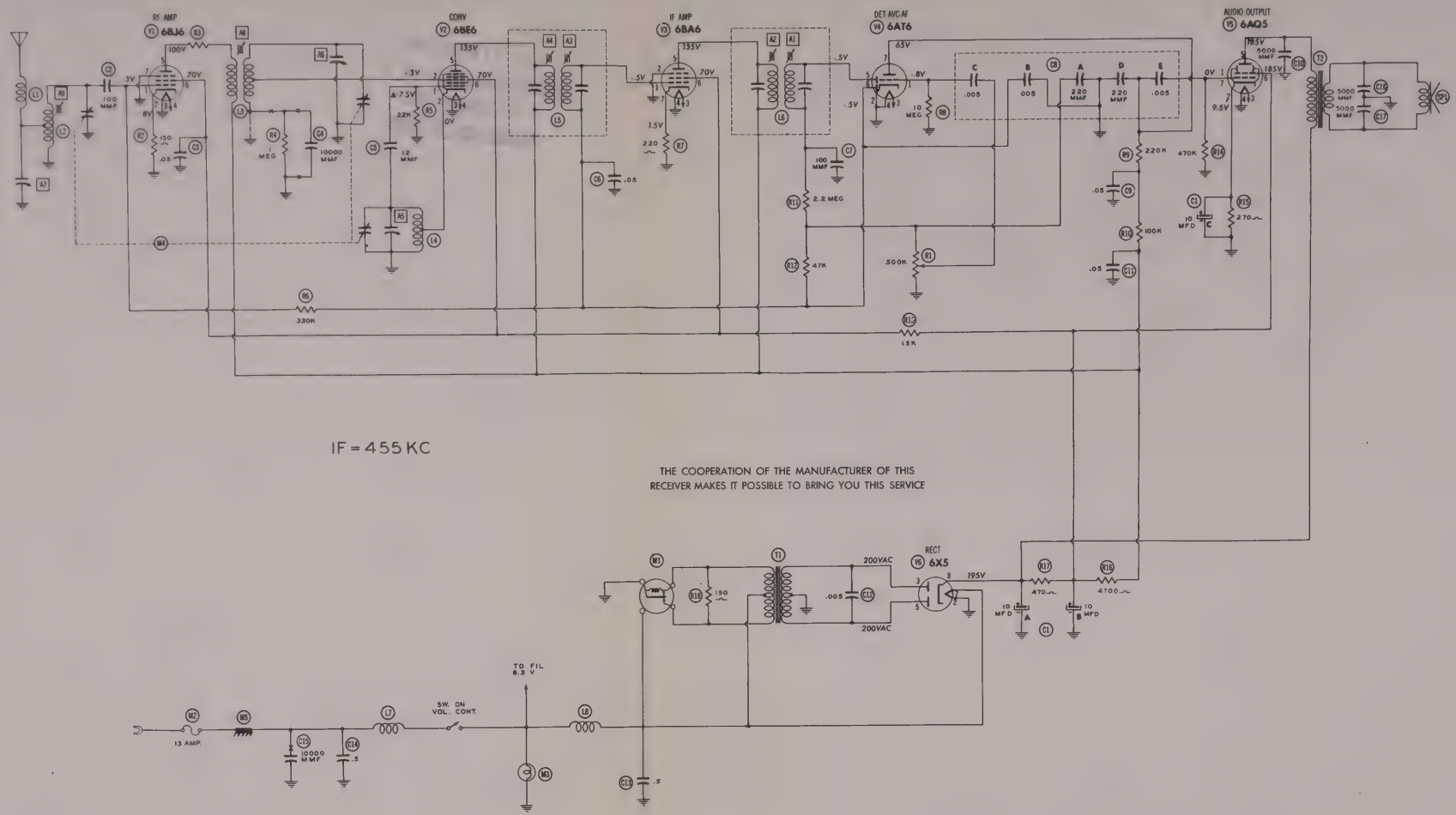
ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	SILVERTONE PART No.	VIKING PART No.	QUAM PART No.	
SP1	4 x 6"	PM	3Ω	B-79-390	46J6	46A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	SILVERTONE PART No.	MERIT PART No.	
L1	Ant. Noise Choke	.7Ω		10-527		
L2	Ant. Coil	3.7Ω		10-575		Tapped @ 2.3Ω
L3	RF Coil	9Ω	9Ω	10-570		Secondary tapped @ 5.5Ω
L4	Osc. Coil	12.5Ω		10-569		Tapped @ 11Ω
L5	Input IF	15Ω	15Ω	10-521		
L6	Output IF	10Ω	10Ω	10-529		
L7	Fil. Line Choke	0Ω		33-229		
L8	Hash Choke	0Ω		33-235		

CHASSIS—BOTTOM VIEW





RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BJ6	3 Meg	150Ω	0Ω	.4Ω	†15KΩ	†15KΩ	0Ω	
V 2	6BE6	22KΩ	1.5Ω	0Ω	.4Ω	†5.2KΩ	†15KΩ	1 Meg	
V 3	6BA6	2.7Meg	0Ω	.4Ω	0Ω	†5.2KΩ	†15KΩ	220Ω	
V 4	6AT6	10Meg	0Ω	.4Ω	0Ω	550KΩ	2.7Meg	†320KΩ	
V 5	6AQ5	470KΩ	270Ω	.4Ω	0Ω	†350Ω	†470Ω	470KΩ	
V 6	6X5GT	.4Ω	0Ω	400Ω	.4Ω	380Ω	.4Ω	.4Ω	60KΩ

† MEASURED FROM PIN 8 OF V6
▲ TAKEN WITH VACUUM TUBE VOLTMETER.

1-DC Voltage measurements are at 20,000 ohms per volt, AC Voltages measured at 1000 ohms per volt.
2-Socket connections are shown as bottom views.
3-Measured values are from socket pin to common negative.
4-Battery voltage maintained at 6.3 volts for voltage readings.
5-Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6-Volume control at maximum , no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA				NOTES
				SILVERTONE PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	RADIART PART No.	
M1	Interrupter	6.3V	115~	A34-105	5301	859	5301	

FUSES

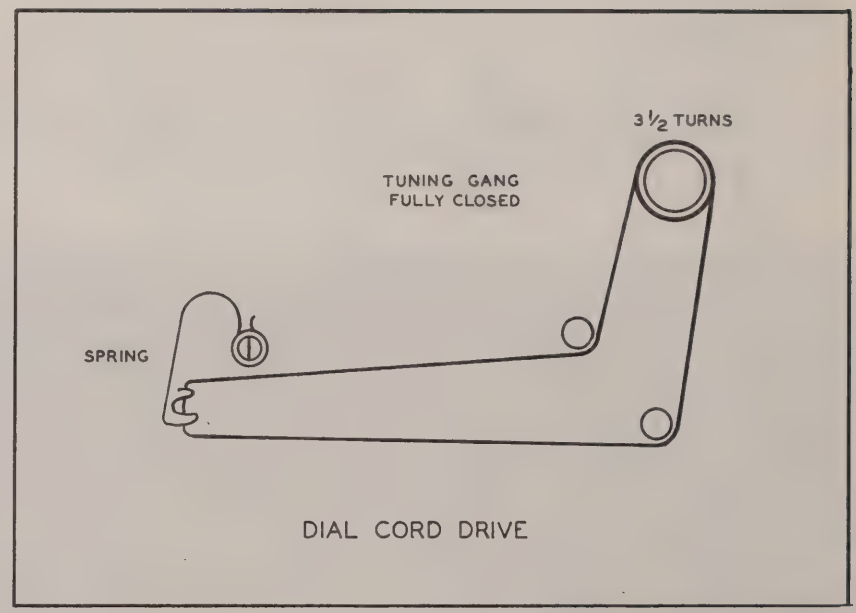
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			SILVERTONE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	15A 32V	43-10	81-13	311015	157020	AGC 15	HDJ-A

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					SILVERTONE PART No.		
M3	Bayonet	6.8	.15	Brown	89-7		Type No. #47

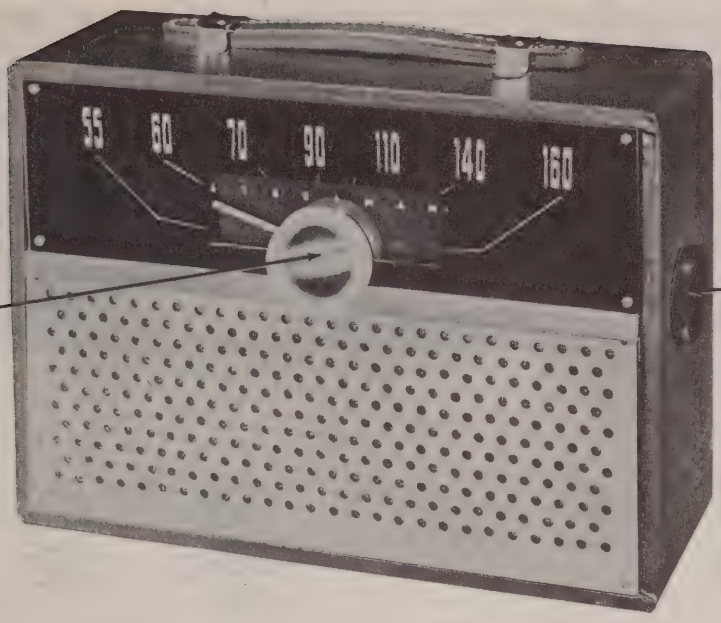
MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M4	3 Gang Var. Cap	19-211	(10-480MMF, 8-220MMF, 6-145MMF)
M5	Spark Plate		
A7	Trimmer	20-150	
	Knob	52-326	
	Pointer	58-84	
	Dial Scale	67-559	Ch. 528.6286
	Dial Scale	67-566	Ch. 528.6287



DIAL CORD DRIVE

STEELMAN
MODEL 602



STEELMAN
MODEL 602

TRADE NAME	Steelman Model 602
MANUFACTURER	Steelman Phono & Radio Co., Inc., 12-30 Anderson Ave., Mt. Vernon, N.Y.
TYPE SET	Three Power Portable AM Superheterodyne Receiver
TUBES (Four)	Types 1R5 Conv., 1U4 IF Amp., 1U5 Det.-AVC-AF Amp., 3V4 Audio Output
POWER SUPPLY	110-120 Volts AC/DC (or) 7.5 Volts "A" Supply & 90 Volts "B" Supply
RATING	.15 Amp. @ 117 Volts AC (or) 50MA @ 7.5 Volts DC & 13MA @ 90 Volts DC
TUNING RANGE—BROADCAST	535-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use battery power, if possible. If AC power is used, use an isolation transformer when available. If not, connect a .1MFD capacitor in series with low side of the signal generator and B-.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (grid) of 1R5 (V1). Low side to B-.	455 KC (400~ Mod)	Tuning gang fully open	Across voice coil	A1, A2 A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200MMF to reduce hum modulation.
2.	"	"	1620 KC	"	"	A5	"
3.		Loop	1400 KC	Tune to 1400 KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: STEELMAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Converter	1R5	1R5	7AT	
V2	IF Amplifier	1U4	1U4	6AR	
V3	Det.-AVC-AF Amp	1U5	1U5	6BW	
V4	Audio Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: STEELMAN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	40	150				EDL5315X-		3N529	TVA-3433	Red
B	40	150				20				Green
C	200									Yellow
C2	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C3	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C4	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C5	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C6	.002	600		P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C7	10000			BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C8	100			SI100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C9	.002	400		P688-002	D6-202	PTE6D2	GP2-333-202	PT622	6TM-D2	
C10	5000			BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C11	.2	400								
C12	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C13	.05	400		P488-05	DF-503	PTE4S5		PT415	4TM-S5	
C14	.2	400								
C15	47			SI47	D6-470	TM5Q5	GP1K-470	UC-5447	5GA-Q47	Note 1

Note 1. Not used in all Models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STEELMAN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1Meg	½	VC-27	Q13-137	AG-63-Z	BSK-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-2	SWB-2	Not Req.	US-27	Attach to R1A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: STEELMAN PART No.	IRC PART No.	NOTES
R2	100KΩ	½		BTS-100K	
R3	2.2Meg	½		BTS-2.2Meg	
R4	8200Ω	½		BTS-8200	
R5	3.3Meg	½		BTS-3.3Meg	
R6	10Meg	½		BTS-10Meg	
R7	4.7Meg	½		BTS-4.7Meg	
R8	220KΩ	½		BTS-220K	

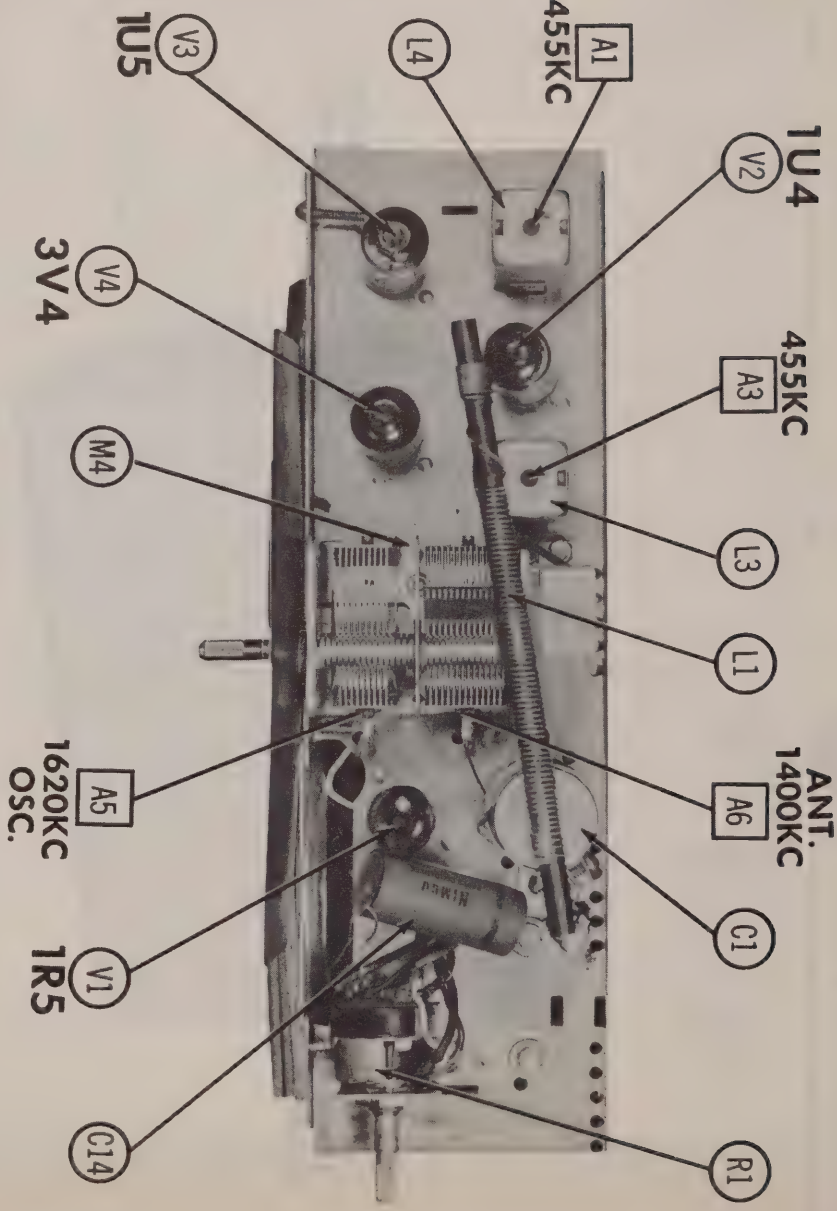
ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: STEELMAN PART No.	IRC PART No.	NOTES
R9	1Meg	½		BTS-1Meg	
R10	1500Ω	½		BTS-1500	
R11	1000Ω	½		BTS-1000	
R12	1000Ω	1		BTS-1000	
R13	39Ω	½			Note
R14	2700Ω	1		BTA-2700	
R15	2500Ω	5		1 3/4A-2500	

Note: Some Models use a 47Ω resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: STEELMAN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T1	7.7KΩ	3.4Ω	390Ω	.34Ω	Part of spkr	A-8114 ①	A-2931 ①	RO-13 ①	S-7X ①	① Bend mtg tabs down, file out slots, mount on original mounting bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	STEELMAN PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.4Ω	SP-41	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	STEELMAN PART No.	MERIT PART No.	
L1	Loop Ant.	.4Ω				
L2	Osc. Coil	.4Ω	3.2Ω			
L3	Input IF	20Ω	20Ω		BC-352	
L4	Output IF	20Ω	20Ω		BC-353	

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT	STEELMAN PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	MALLORY PART No.	
M1	.072 A		NB-5	5M4	1003	6S75	

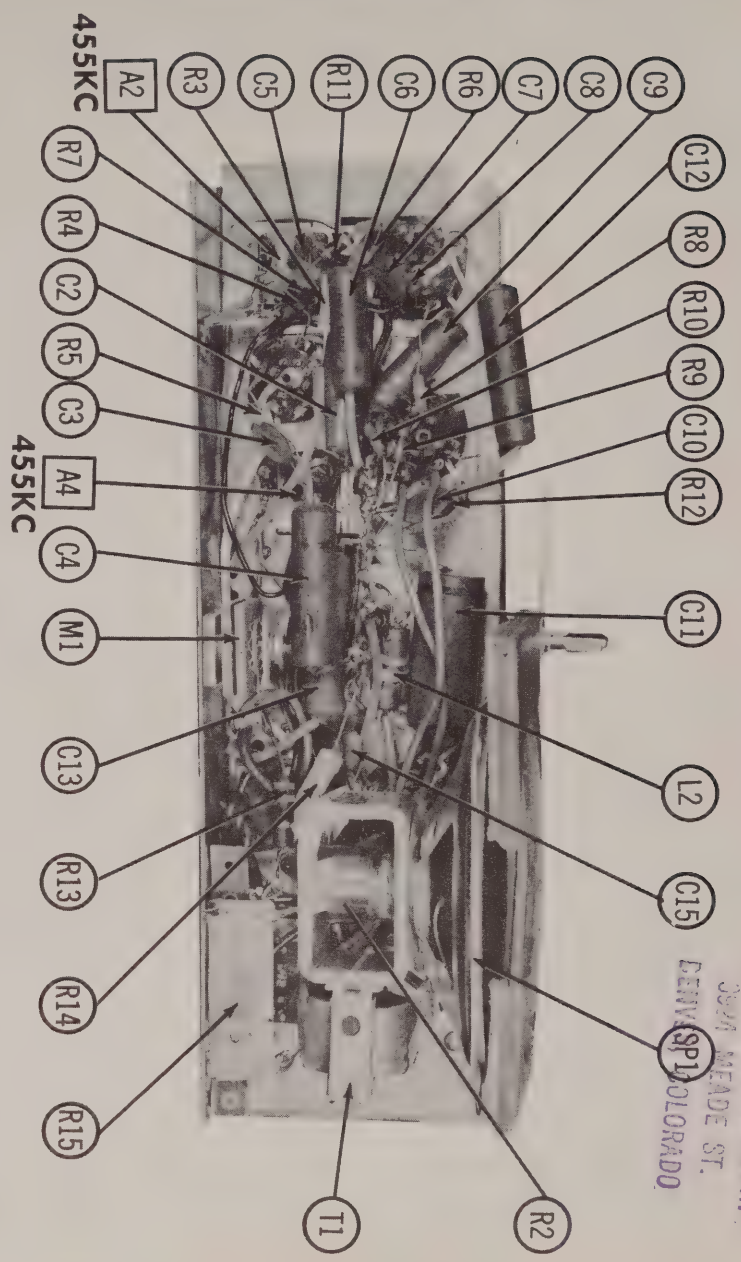
BATTERIES

ITEM No.	VOLTAGE	STEELMAN PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2	7.5 V.		717			C5			
M3	90 V.			490			N60		

MISCELLANEOUS

ITEM No.	PART NAME	STEELMAN PART No.	NOTES
M4	2 gang Var. Cap.		(38-485MMF, 26-205MMF)

CHASSIS—BOTTOM VIEW



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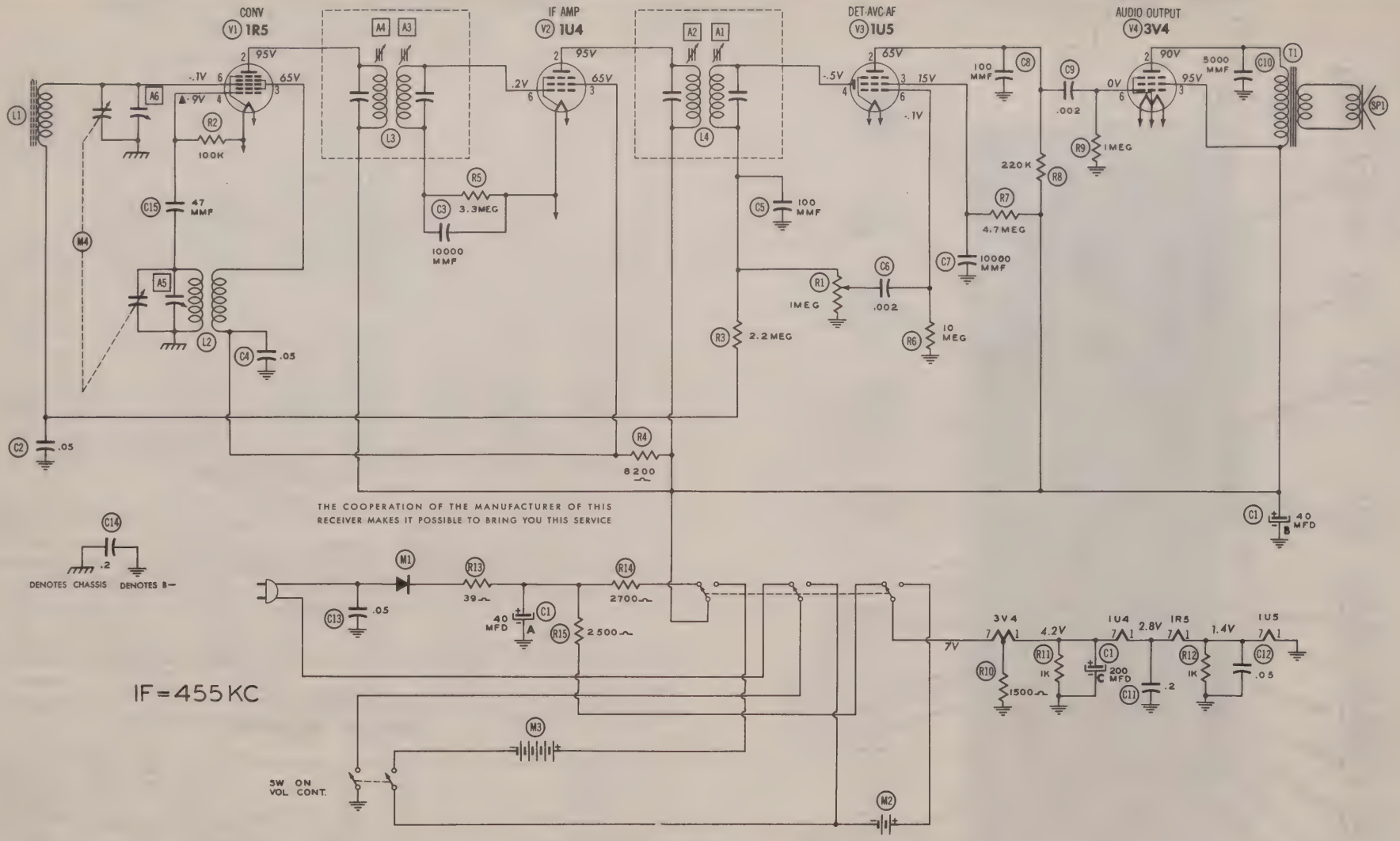

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	*	†2.7KΩ	†11KΩ	100KΩ	*	3.2Meg	*
V 2	1U4	*	†2.7KΩ	†11KΩ	3.2Meg	*	3.3Meg	*
V 3	1U5	0Ω	†220KΩ	†4.7Meg	1Meg	0Ω	10Meg	*
V 4	3V4	*	†3.1KΩ	†2.7KΩ	INF	*	1Meg	*

ALL MEASUREMENTS TAKEN WITH POWER CHANGE OVER SWITCH IN AC LINE POSITION
† MEASURED FROM OUTPUT OF M1
▲ TAKEN WITH VACUUM TUBE VOLTMETER
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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185–13

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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MODEL 2D1230B

TRUETONE
MODEL 2D1230B

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TRUETONE MODEL 2D1230B

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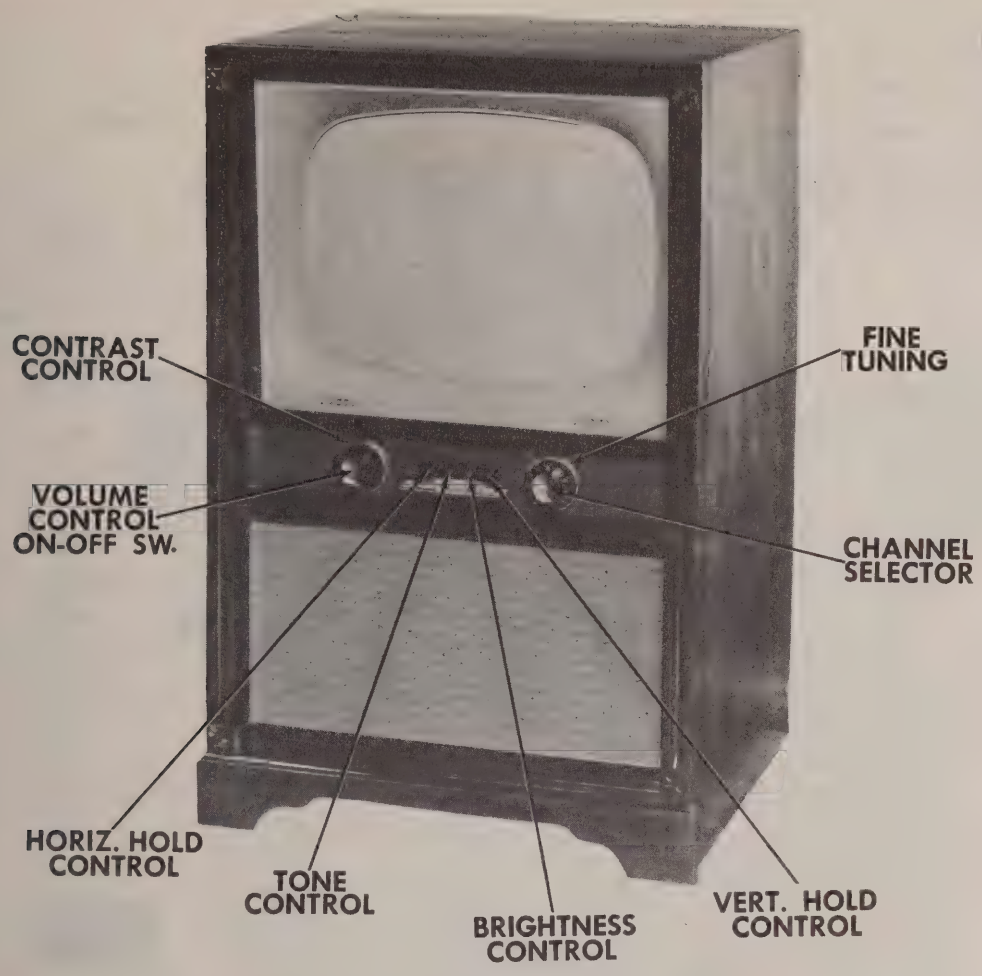

TRUETONE MODEL 2D1230B

TRADE NAME	Truetone Model 2D1230B
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Missouri
TYPE SET	Television Receiver
TUBES	Twenty - Three
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 1.82 Amp. @ 117 Volts AC
TUNING RANGE—	Channels 2 thru 13

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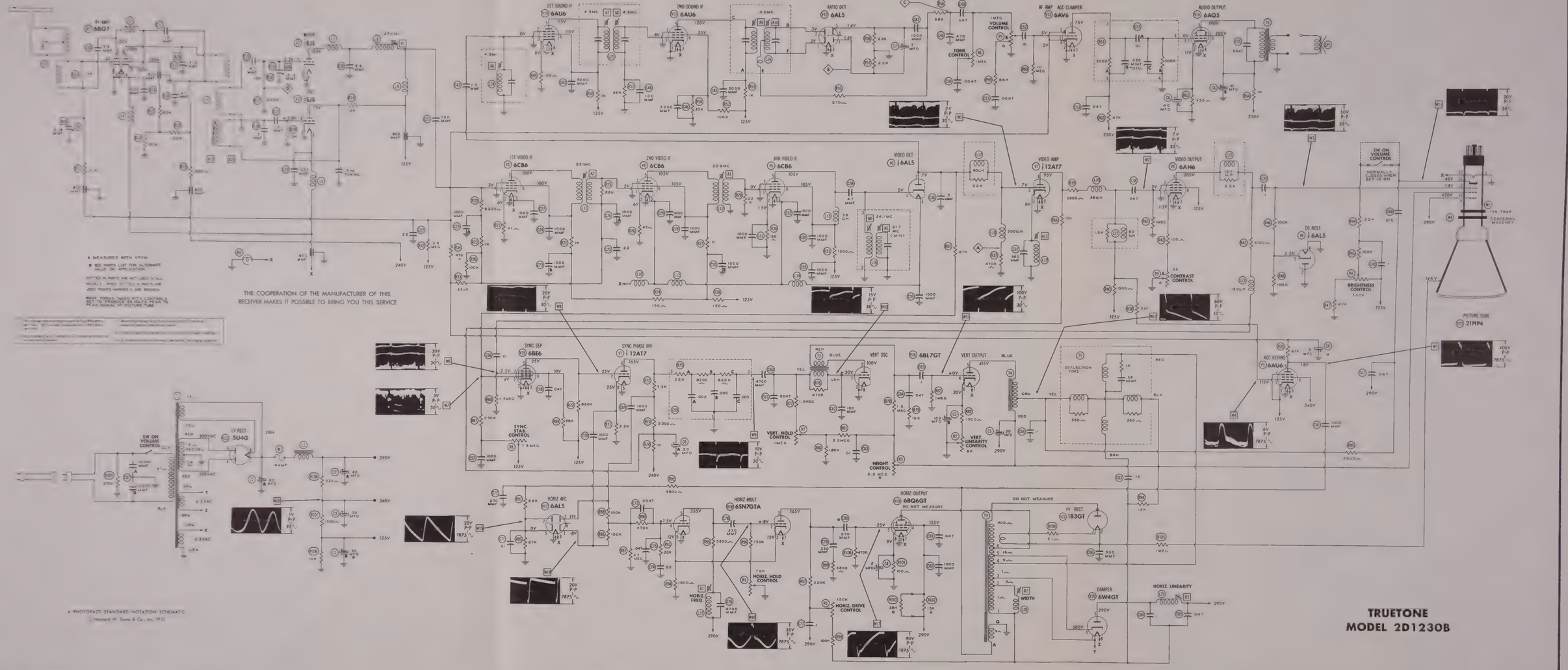
TRUETONE
MODEL 2D1230B
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
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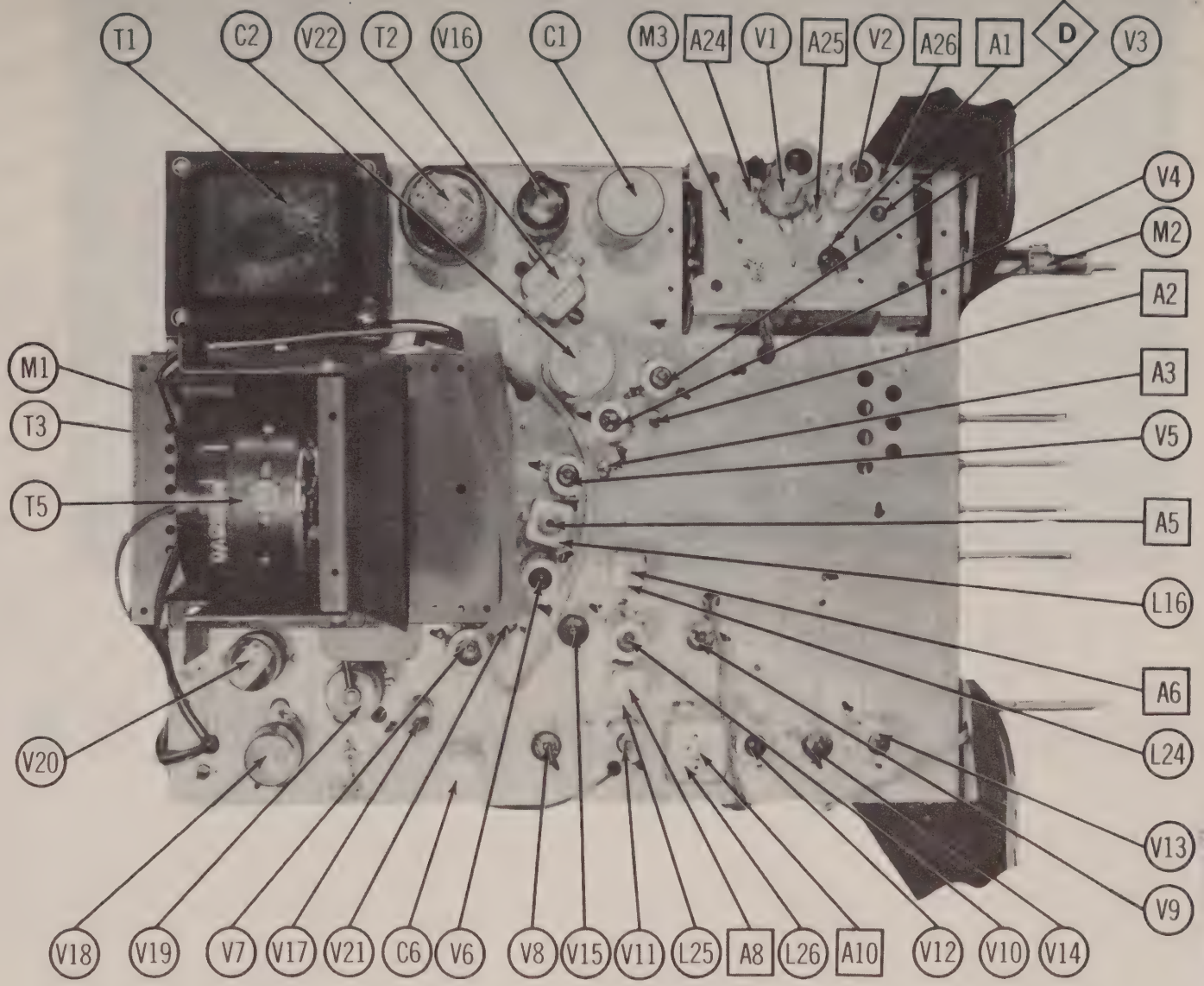
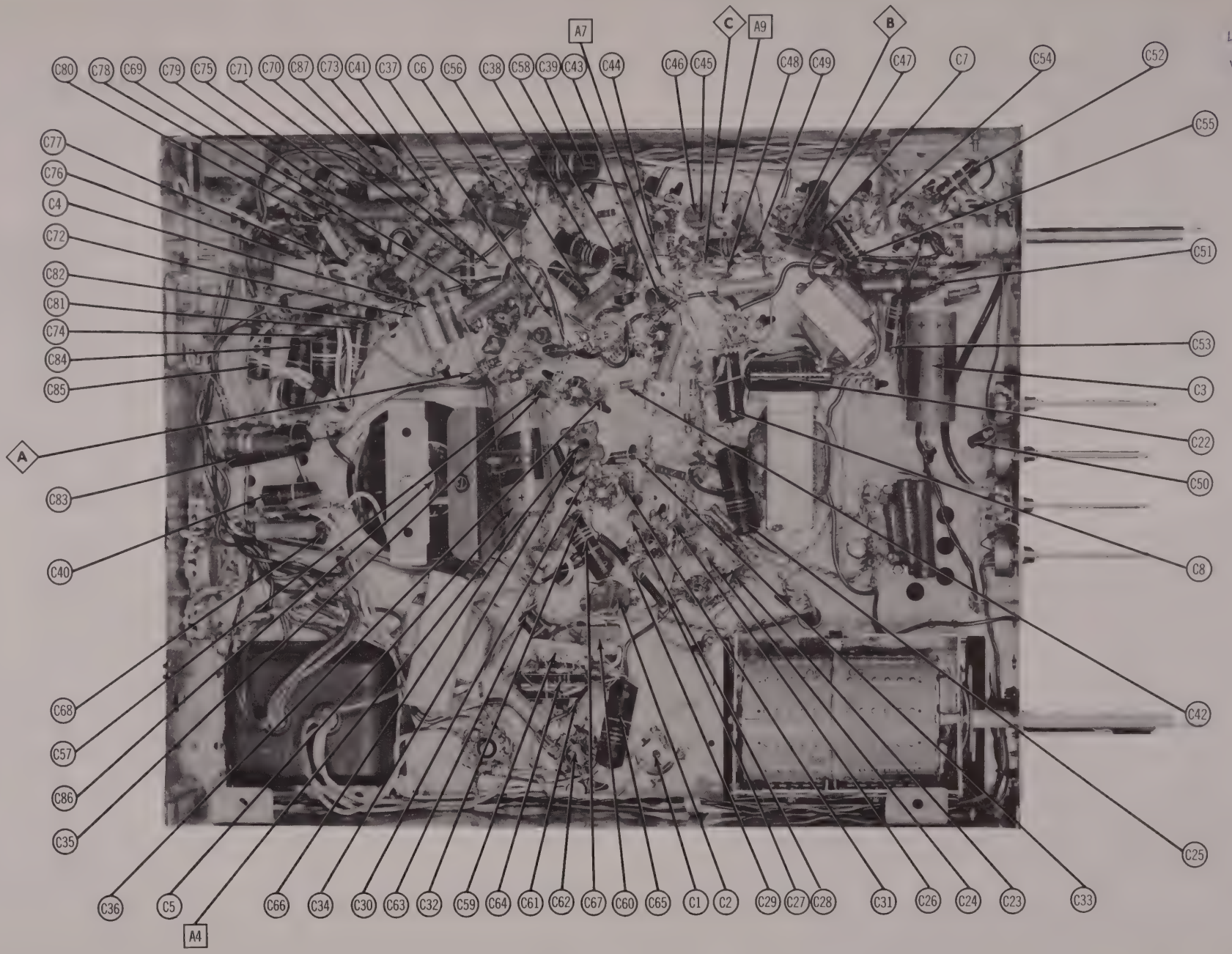
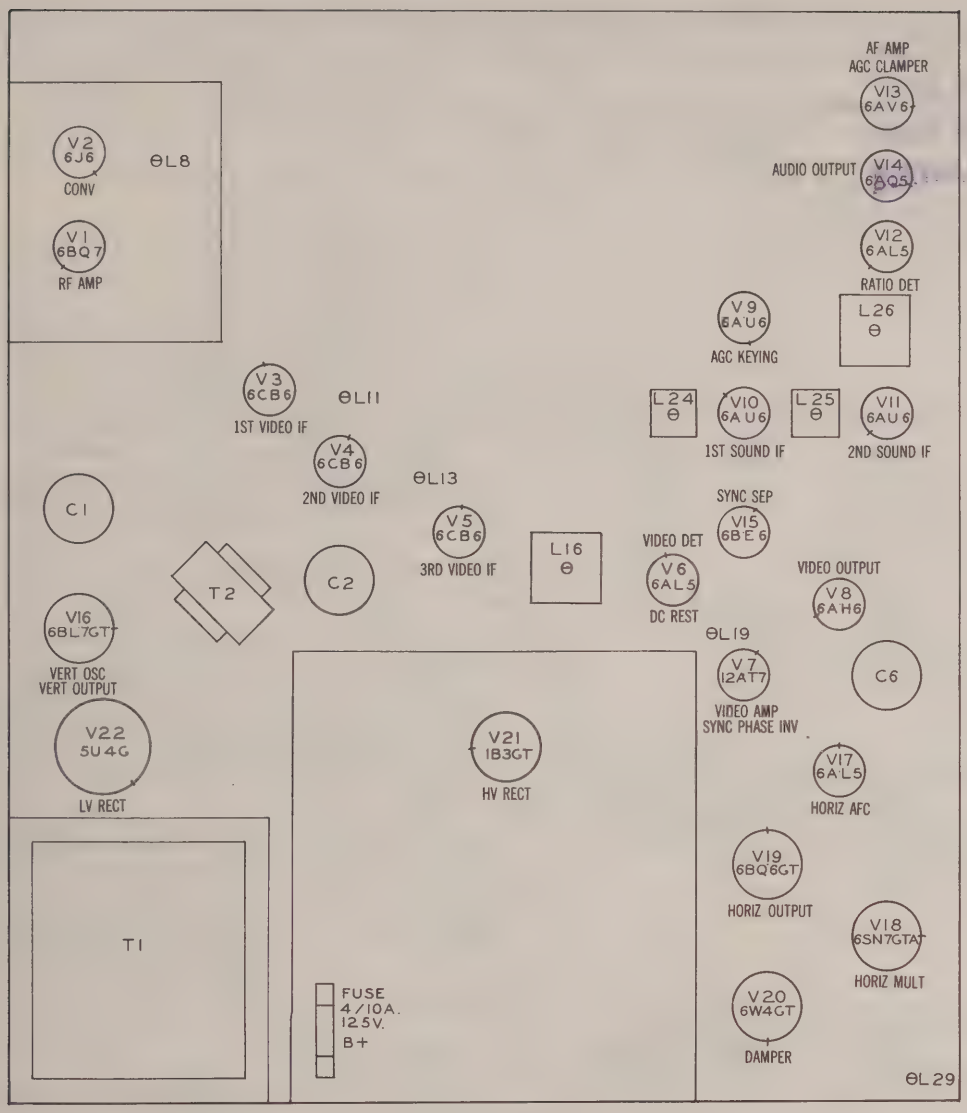


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW- CAPACITOR AND ALIGNMENT IDENTIFICATION

TUBE PLACEMENT CHART



TOP VIEW

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound-V22, Fuse(M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster-V2, V3, V4, V5, V6
No pic, no sound, has snow-V1, V2, V3
No pid, has sound, has raster-V6, V7, V8, V23
Has pic, ho sound-V10, V11, V12, V13, V14
Overloaded picture-V9, V13

SYNC FAILURE
No vert. sync.-V7, V16
No horiz. sync.-V7, V17, V18
No vert. or horiz. sync. V7, V15

SWEEP FAILURE
No raster, has sound-V18, V19, V20, V21, V23
No vertical deflection-V16
Poor vert. linearity or foldover-V16
Poor horiz. linearity or foldover-V18, V19, V20
Narrow picture-V18, V19, V20, V21, V22
Vert. off freq. -V7, V16
Horiz. off freq. -V7, V17, V18

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multivibrator tube, V18.

VIDEO IF ALIGNMENT

Remove the converter tube, V2 and replace with a 6J6 which as pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded side of C25. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, V2. Low side to chassis.	25.1MC (Unmod)	Any	DC probe to point (A) Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	23.1MC	"	"	A2	"
3.	"	"	25.9MC	"	"	A3	"
4.	"	"	24.1MC	"	"	A4	"
5.	"	"	21.7MC	"	"	A5	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, V2. Low side to chassis.	24MC (10MC Swp)	21.7MC 23MC 23.5MC 25.25MC 26.2MC	Any	Vert. amp. to point (A). Low side to chassis.		Check for response curve similar to fig.1 If necessary retouch A1 through A4 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.01MFD	High side to pin 1, (cathode) of 6AL5 (V6) Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point (B) Common to chassis.	A6, A7, A8, A9	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to point (C) Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD	High side to pin 1 (Cathode) of 6AL5 (V6). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp. to point (B). Low side to chassis.	A6, A7, A8, A9	Disconnect stabilizer capacitor C7. Adjust for curve of maximum amplitude and symmetry as in fig. 2.
8.	"	"	"	"	"	Vert. Amp. to point (C). Low side to chassis.	A10	Reconnect capacitor C7. Adjust so that 4.5MC occurs at center of crossover lines as in fig. 3. SLIGHTLY retouch A9 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

Turn contrast control to maximum clockwise position.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to pin 7 of 6AL5 (V12).	Not used	4.5MC (400∿Mod.)	Any	Vert. amp. to pin 2 of picture tube.	A11	Adjust for MINIMUM 400∿ indication on scope.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The oscillator adjustment screws for each channel are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. to point (A). Low side to chassis.	A12	Adjust to place sound marker in notch as in fig. 4. Video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A13	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A14	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A15	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A16	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A17	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A18	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A19	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A20	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A21	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A22	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A23	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point ◇D◇. Low side to chassis.	A24, A25 A26	Adjust for response curve similar to fig. 5. with markers above 90%.
12.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to fig. 5. If markers fall below 70% on any channel make slight compromise adjustments of A24, A25 and A26 with channel switch set that channel, Recheck all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

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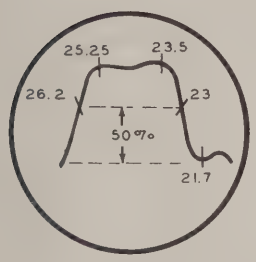


FIG. 1

FIG. 2

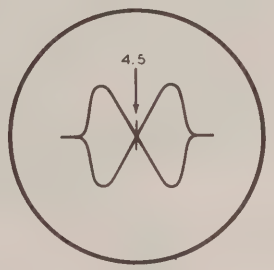


FIG. 3

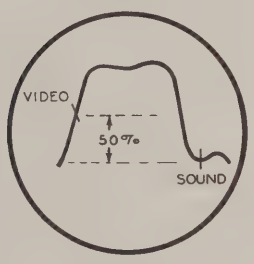


FIG.4

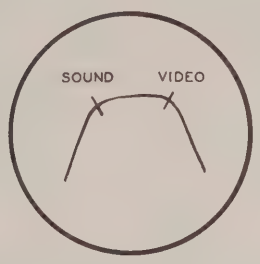
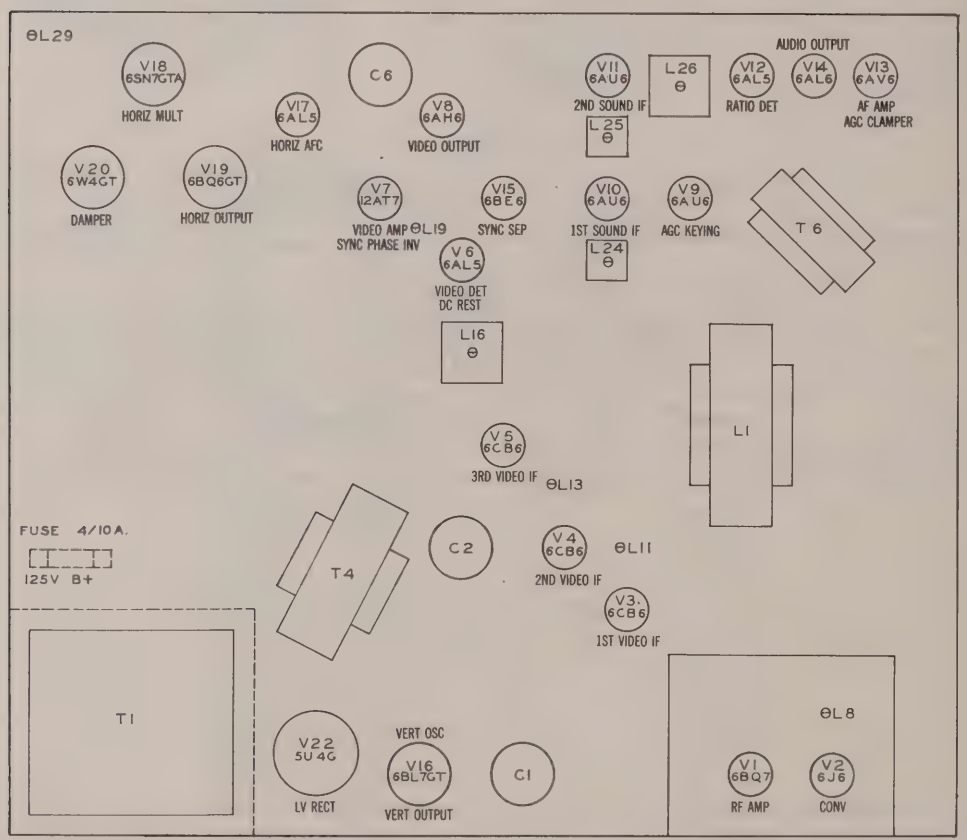


FIG 5

RESISTANCE MEASUREMENTS

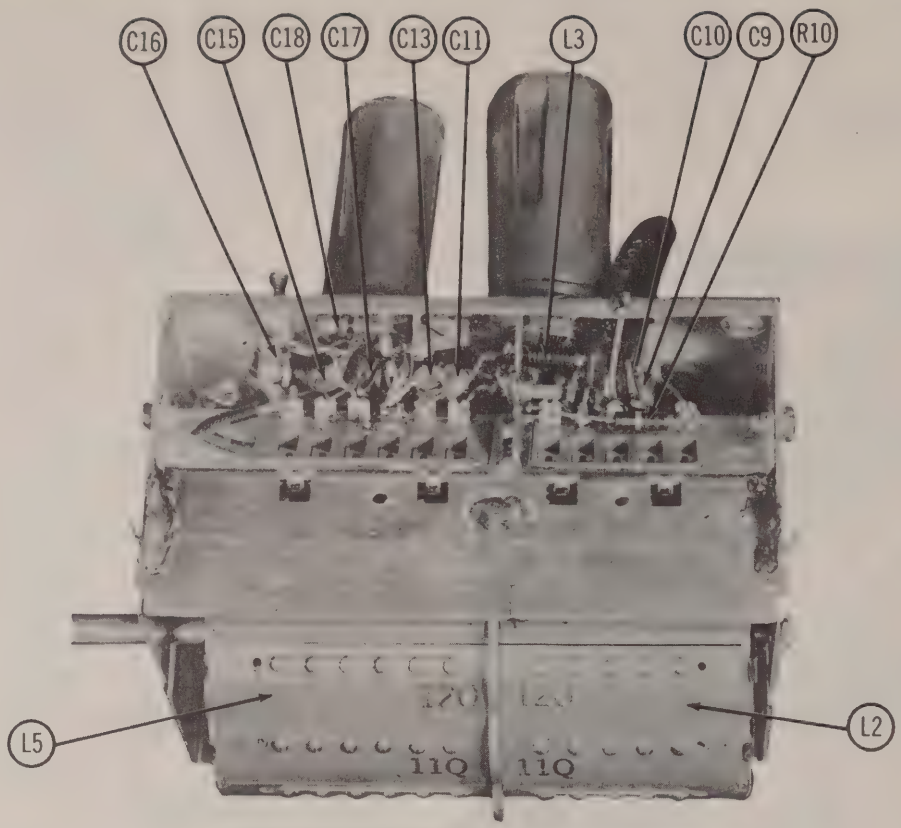
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7	INF	720KΩ	0Ω	.1Ω	0Ω	1.9KΩ	†175KΩ	INF	0Ω
V 2	6J6	†12KΩ	†1.9KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	110KΩ	47Ω	.1Ω	0Ω	†3.2KΩ	†3.2KΩ	0Ω		
V 4	6CB6	100KΩ	47Ω	.1Ω	0Ω	†3KΩ	†3KΩ	0Ω		
V 5	6CB6	.3Ω	180Ω	.1Ω	0Ω	†3.4KΩ	†3.4KΩ	0Ω		
V 6	6AL5	.2Ω	0Ω	.1Ω	0Ω	1 Meg	0Ω	4.7KΩ		
V 7	12AT7	†9KΩ	4.7KΩ	.3Ω	0Ω	0Ω	†6.9KΩ	†820KΩ	2.2KΩ	.1Ω
V 8	6AH6	1 Meg	0Ω	.1Ω	0Ω	†6.1KΩ	†1.9KΩ	250Ω		
V 9	6AU6	†36KΩ	†1.9KΩ	.1Ω	0Ω	440KΩ	†380Ω	†1.9KΩ		
V 10	6AU6	2.8Ω	0Ω	0Ω	.1Ω	†2.9KΩ	†2.9KΩ	100Ω		
V 11	6AU6	56KΩ	0Ω	.1Ω	0Ω	†2.9KΩ	25KΩ	0Ω		
V 12	6AL5	INF	INF	.1Ω	0Ω	22KΩ	INF	22KΩ		
V 13	6AV6	10 Meg	0Ω	.1Ω	0Ω	670KΩ	670KΩ	550KΩ		
V 14	6AQ5	500KΩ	330Ω	0Ω	.1Ω	†1.9KΩ	†1.4KΩ	500KΩ		
V 15	6BE6	52KΩ	0Ω	.1Ω	0Ω	†820KΩ	70KΩ	1.5Meg		
V 16	6BL7GT	2.3Meg	#1.6Meg	0Ω	1 Meg	#16KΩ	3KΩ	.1Ω	0Ω	
V 17	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	8.7KΩ	INF	8.7KΩ		
V 18	6SN7GTA	175KΩ	#420KΩ	1.8KΩ	5.1Meg	†5.7KΩ	1.8KΩ	.1Ω	0Ω	
V 19	6BQ6GT	5.7KΩ	0Ω	INF	†11KΩ	470KΩ	#200KΩ	.1Ω	100Ω	Top Cap #16Ω
V 20	6W4GT	†51Ω	INF	190KΩ	4.7Meg	†67Ω	†51Ω	#16Ω	#16Ω	
V 21	1B3GT	PINS 1 - 8 HAVE INF RESISTANCE								Top Cap #416Ω
V 22	5U4G	INF	9.5KΩ	INF	17.4Ω	1.5KΩ	16Ω	INF	9.5KΩ	
V 23	21MP4	0Ω	1.1Meg	Pin 6 †51Ω	Pin 10 #15KΩ	Pin 11 200KΩ	Pin 12 .1Ω			

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 2 OF V22
# MEASURED FROM PIN 3 OF V20

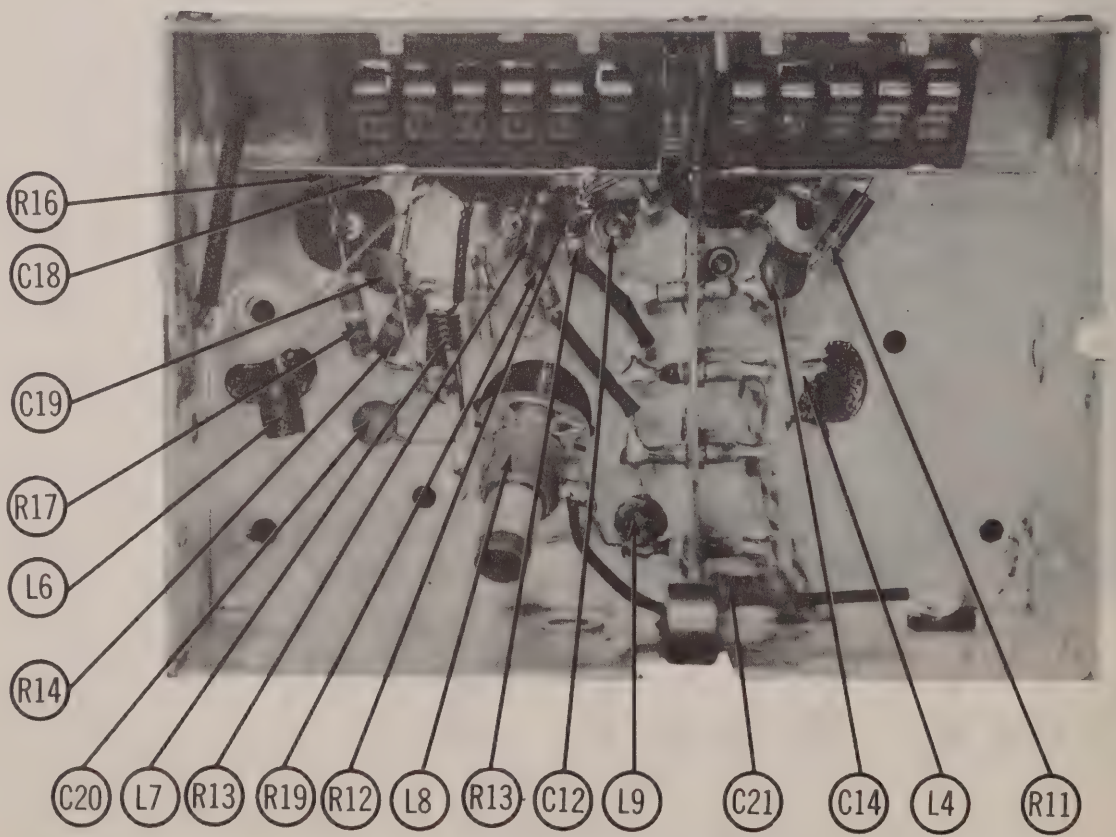


BOTTOM VIEW

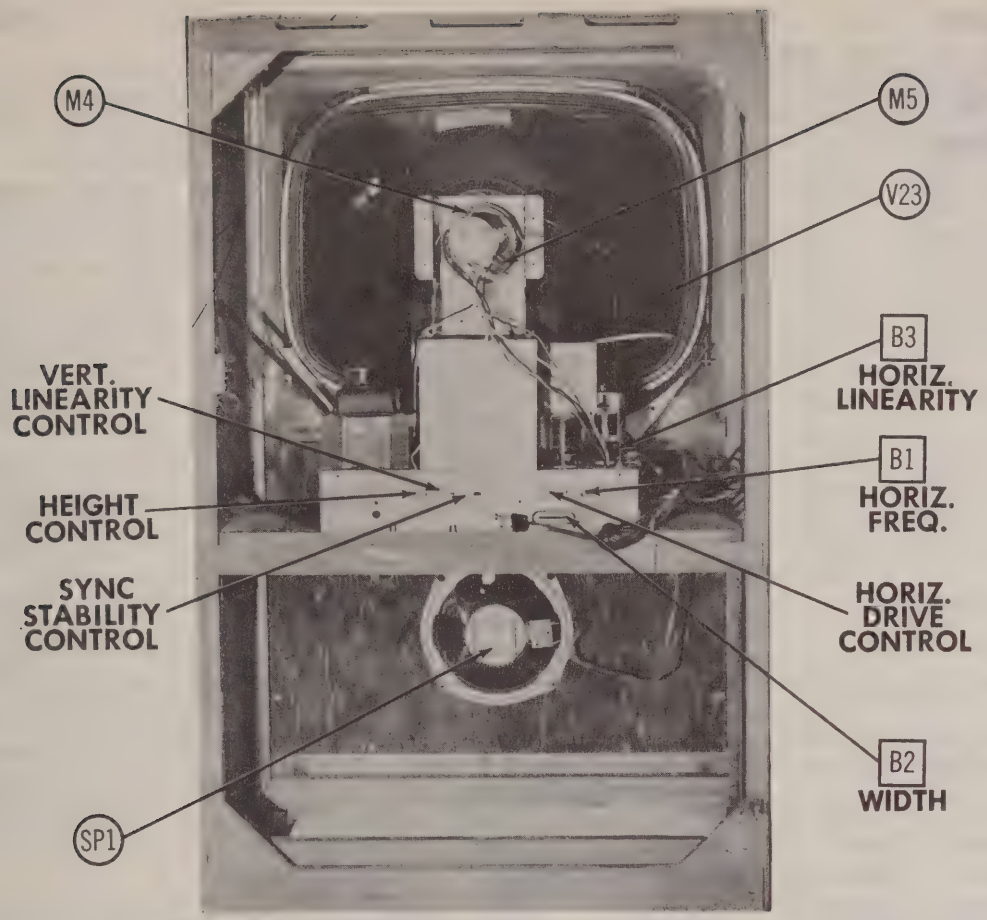
TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug (B1) until the picture falls into sync.

Adjust the horizontal drive control for the best compromise between brightness and linearity.

Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.

SYNC STABILITY CONTROL ADJUSTMENT

Tune set to strongest TV signal available.

Turn the sync stability control clockwise until bending of the picture occurs at the top, then turn counter clockwise until the bending just disappears.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 2 wood & 2 metal screws, Remove rear cover.
3. Disconnect built-in antenna & speaker.
4. Remove 5 chassis bolts. Remove chassis.
5. Remove 4 speaker nuts. Remove speaker.

NOTE:
FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

PROPERTY OF L. E. RANKENSHIP 3324 HEATON ST DENVER, COLORADO

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BQ7	6BQ7	9A7	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector - DC Restorer	6AL5	6AL5	6BT	
V7	Video Amplifier - Sync Phase Inv.	12AT7	12AT7	9A	
V8	Video Output	6AH6	6AH6	7BK	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V11	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	AF Amplifier - AGC Clamper	6AV6	6AV6	7BT	
V14	Audio Output	6AQ5	6AQ5	7BZ	
V15	Sync Separator	6BE6	6BE6	7CH	
V16	Vert. Oscillator - Vert. Output	6BL7GT	6BL7GT	8BD	
V17	Horiz. AFC	6AL5	6AL5	6BT	
V18	Horiz. Mult.	6SN7GTA	6SN7GTA	8BD	
V19	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V20	Damper	6W4GT	6W4GT	4CG	
V21	HV Rectifier	1B3GT	1B3GT	3C	
V22	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V23	21MP4			12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	▲80	475	45X390	AFH3-46		UPT84245		FP266	TVL-3792	Note 1
B	▲50	450								
C1A	▲80	450	45X391	AFH3-142		UPT4445-V10		FP375	TVL-3764	
B	▲100	50								
C3	30	400	45X393	PRS450/30		BR3045A		TC77	TVA-1711	
C4	5	25	45X378	PRS150/4		BBR-5-50		TC30	TVA-1203	
C5	30	400	45X393	PRS450/30		BR3045A		TC77	TVA-1711	
C6A	▲20	400	45X392	AFH3-137		UPT2145-V5		FP366	TVL-3751	
B	▲10	400								
C	40	50								
C7	5	25	45X378	PR8150/4		BBR-5-50		TC30	TVA-1203	
C8	5	25	45X378	PR8150/4		BBR-5-50		TC30	TVA-1203	Note 2
C9	3-9		31B-207		829-10					
C10	3.6		CD8C3R6C							
C11	1.5		CD8C1R5M	Sil.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C12	.5-3		31B-206		829-3			CT565A		
C13	47		CD8X470K	Si47N750	TCN-47		N750K-470	NT-5447	5TCU-Q47	
C14	1000		CD8X102K	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C15	47		CD8Q470K	Si47N750	TCN-47		N750K-470	NT-5447	5TCU-Q47	
C16	5-3		31B-206		829-3			CT565A		
C17	10		CD10C100K	Si10N750	TCN-10		N750K-100	NT-541	5TCU-Q1	
C18	5		CD8U050C	Si5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C19	1000		CD8X102Z	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C20	6.8		CD8C6R8C	Si6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C21	120		31D-055	Si120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C22	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	2TM-P22	
C23A	1000		80X3	BPD-2X001	DD-2-102	TM5DD1	812-001	DCD-521	5HK-2D1	
B	1000									
C24	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C25	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	2TM-P22	
C26A	1000		80X3	BPD-2X001	DD-2-102	TM5DD1	812-001	DCD-521	5HK-2D1	
B	1000									
C27	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C28	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C29	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C30	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C31	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C32	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C33	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C34	47		47X603	Si47	D6-470	SR5Q5	GP1K-470	UC-5447	5GA-Q47	
C35	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C36	5		47X562	Si5NP0	TCZ-4.7		NP0K-050	ZT-555	5TCCB-V47	
C37	360	500	47X568							
C38	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C39	.1	400	RCP10M4104M	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C40	.1	200	RCP10M2104M	P288-1	DF-104	PJ2P1		PT401	2TM-P1	
C41	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C42	1.5		47X584	Si1.5NP0	TCZ-1.5		NP0K-1R5	ZT-5515	5TCCB-V15	
C43	5000		47X507	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C44	100		47X604	Si100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C45	5000		47X507	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C46	5000		47X507	BPD-005	DD-502	TM5D5	811-005	DC-525	5HK-D5	
C47	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C48	470	500	47X525	1468-0005	D6-471	5W5T5	GP2K-471	MC-245	1FM-35	
C49	.047	200	RCP10M2473M	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C50	.0047	400	RCP10M4472M	P488-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C51	.0047	400	RCP10M4472M	P488-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C52	.01	400	RCP10M4103M	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C53	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C54A	.01				†PC-80		†1404-01		†102C1	
B	▲250		†76X5							
C										
C55	.0047	600	RCP10M6472M	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C56	.01	400	RCP10M4103M	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C57	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C58	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C59A	.002			P688-002		PTE6D2		PT622		
B	.005		♦76X7	P688-005	♦PC-100	PTE6D5	♦1405-01	PT625	♦101C1	
C	.005			P688-005		PTE6D5		PT625		
C60	4700	500	47X543	1464-005		IDR5D5		MCB465	MS-25	
C61	.0047	400	RCP10M4472M	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C62	100		47X604	Si100	D6-101	TM5T1	GP1K-101	UC-531	5GA-T1	
C63	.01	600	RCP10M6103M	P688-01	D6-103	PTE6S1	GP2-333-103	PT611	6TM-S1	
C64	.047	600	RCP10M6473M	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C65	.1	600	RCP10M6104M	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C66	.1	600	RCP10M6104M	P688-1	DF-104	PTE6P1		PT601	6TM-P1	
C67	.047	600	RCP10M6473M	P688-047	DF-503	PTE6S47		PT6147	6TM-S47	
C68	.015	600	RCP10M6153M	P688-015		PTE6S15			6TM-S15	
C69	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C70	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C71	.01	400	RCP10M4103M	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C72	270	500	RCM20A271K	1469-0003		SR5T3		MCB241	MS-33	
C73	.0047	600	RCP10M6472M	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C74	.22	200	RCP10M2224M	P488-22		PTE4P22		PT4025	2TM-P22	
C75	.047	200	RCP10M2473M	P288-047	DF-503	PTE4S47		PT4147	2TM-S47	
C76	4700	500	47X543	1464-005		IDR5D5		MCB465	MS-25	
C77	.1	600	RCP10M6104M	P688-1	DF-104	PTE6P1		PT601	6TM-S1	
C78	330	500	47X570	1469-00035						
C79	330	500	47X570	1469-00035						
C80	270	500	RCM20A271K	1469-0003		5R5T3		MCB241	MS-33	Note 3
C81	.047	400	RCP10M4473M	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C82	1000		80X1	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C83	.15	400	RCP10M4154M	P488-15		PTE4P15			4TM-P15	
C84	.1	400	RCP10M4104M	P488-1		PTE4P1		PT401	4TM-P1	
C85	.047	400	RCP10M4473M	P488-047		PTE4S47		PT4147	4TM-S47	
C86	500	20000	47X560	HV20C	TV3-502	MMC-20TS	413-501		20DK-T5	
C87A	10000		†76X8	BPD-01	DD-3-103	TM5DS1	†821-01	DC-511	5HK-2S1	
B	10000			BPD-01			†821-01	DC-511		

Note 1. Some models use 80MFD in this application.
Note 2. Some models use 4MFD in this application (Part #45X361)
Note 3. Some models use 180MMF in this application (Part #47X564)
♦ Items C59A, C59B, C59C, R75A, R75B, R75C are combined in one unit.
† Items C54A, C54B, C54C, R61A, R61B are combined in one unit.
When replacing items separately C54B, C54C should total 250MMF.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	50KΩ	½	40X361A	Q11-123	AG-44-S	AB-31	U-35	Horiz. Hold
B	Shaft		Not Req.	Not Req.	RS-3/16	AK-4	Not Req.	Attach to R1A
R2A	8KΩ	½	40X362	Q11-116	AG-27-S	AB-14	SU-20	Vert Linearity
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R2A
R3A	2.5Meg	½	40X-293-C	Q11-239	AG-84-S	AB-83	SU-565	Height-Note 1
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R3A
R4A	500KΩ	½	B40X333-A	Q11-133	AG-58-S	AB-59	U-50	Brightness
B	Shaft		Not Req.	Not Req.	RS-3/16	AK-4	Not Req.	Attach to R4A
R5A	150KΩ	½	B40X331-A	Q11-129	AG-52-S	AB-46	U-43	Horiz. Drive
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R5A
R6A	1 Meg	½	B 40X334-D	Q11-137	AG-61-S	AB-69	U-54	Tone
B	Shaft		Not Req.	Not Req.	RS-3/16	AK-4	Not Req.	Attach to R6A
R7A	1 Meg	½	B40X334-D	Q11-137	AG-61-S	AB-69	U-54	Vert. Hold
B	Shaft		Not Req.	Not Req.	RS-3/16	AK-4	Not Req.	Attach to R7A
R8	7.5Meg	½	40X293C					Sync. Stability Contrast - Panel-Note 2
R9A	3000Ω	½	78X9	QJ-337 *				Volume & Sw. - Tapped ④
B	1 Meg	½						200KΩ - Rear

Note 1 Some models use alternate control (Part No. 40X364)
Note 2 Some models use alternate control (Part No. 78X12)
*CONCENTRIKIT EQUIVALENT KIT K-2, BASE ELEMENTS & SHAFTS B17-112 & P1-310 (Panel) B13-137 & R2-322 (Rear) & SWITCH 76-2.

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	NOTES
R10	15KΩ	½	12A-004	BTS-15K	
R11	47KΩ	½	12A-039	BTS-47K	
R12	100KΩ	½	12A-094		
R13	100KΩ	½	12A-166	BTS-100K	
R14	160KΩ-5%	½	12A-167	BTS-160K-5%	
R15	1500Ω	½	12A-183	BTS-1500	
R16	10KΩ	½	12A-040	BTS-10K	
R17	220KΩ	½	12A-041	BTS-220K	
R18	10KΩ	½	12A-040	BTS-10K	
R19	10KΩ	½	12A-040	BTS-10K	
R20	8200Ω	½	B83822		
R21	47Ω	½	B83470		
R22	1000Ω	½	B85102	BTS-1000	
R23	1000Ω	½	B85102	BTS-1000	
R24	150Ω	½	B85151	BTS-150	
R25	22KΩ	½	B83223		
R26	47Ω	½	B83470		
R27	1000Ω	½	B85102	BTS-1000	
R28	150Ω	½	B85151	BTS-150	
R29	22KΩ	½	B83223		
R30	180Ω	½	B84181	BTS-180	
R31	1500Ω	½	B84152	BTS-1500	
R32	3.9Meg-5%	½	B83395	BTS-3.9Meg-5%	
R33	330KΩ-5%	½	B83334	BTS-330K-5%	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	NOTES
R34	470KΩ	½	B84474	BTS-470K	
R35	47KΩ	½	B84473	BTS-47K	
R36	100KΩ	½	B84104	BTS-100K	
R37	47000-5%	½	B83472	BTS-4700-5%	
R38	33KΩ	½	B84333	BTS-33K	
R39	5600Ω	1	C84562	BTA-5600	
R40	1500Ω	½	B84152	BTS-1500	
R41	1 Meg	½	B84105	BTS-1 Meg	
R42	100Ω	½	B84141	BTS-100	
R43	4700-5%	1	C84472	BTA-4700-5%	
R44	22KΩ	½	B84223	BTS-22K	
R45	100KΩ	½	B85104	BTS-100K	
R46	100KΩ	½	B85104	BTS-100K	
R47	47KΩ	½	B85473	BTS-47K	
R48	1 Meg	½	B84105	BTS-1 Meg	
R49	100Ω	½	B84101	BTS-100	
0	1000Ω	½	B85102	BTS-1000	
R51	56KΩ	½	B84563		
R52	100KΩ	½	B84104		
R53	1000Ω	½	B85102	BTS-1000	
R54	33KΩ	½	B84333	BTS-33K	
R55	270Ω	½	B84271	BTS-270	
R56	68KΩ	½	B84683	BTS-68K	
R57	22KΩ	½	B84223	BTS-22K	
R58	22KΩ	½	B84223	BTS-22K	

RESISTORS (CONT.)

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	NOTES
R59	68KΩ	½	B84683	BTS-68K	
R60	10 Meg	½	B85106	BTS-10 Meg	
R61A	500KΩ	½	†76X5		
B	500KΩ	½			
R62	47KΩ	½	B85473	BTS-47K	
R63	330Ω	1	C84331	BTA-330	
R64	1000Ω	2	D84102	BTB-1000	
R65	47KΩ	½	B84473	BTS-47K	
R66	10KΩ	½	B84103	BTS-10K	
R67	270KΩ	½	B84274	BTS-270K	
R68	1.5 Meg	½	B84155	BTS-1.5 Meg	
R69	68KΩ	½	B84683	BTS-68K	
R70	820KΩ	½	B84824	BTS-820K	
R71	2200Ω	½	B83222	BTS-2200	
R72	3300Ω	½	B84332	BTS-3300	
R73	2200Ω-5%	½	B83222	BTS-2200-5%	
R74	1000Ω	2	D84102	BTB-1000	
R75A	22KΩ	½		BTS-22K	
B	8200Ω	½	♦ 76X7	BTS-8200	
C	8200	½		BTS-8200	
R76	470KΩ	½	B85474	BTS-470K	
R77	1.5 Meg	½	B84155	BTS-1.5 Meg	
R78	1.2 Meg	½	B 84125	BTS-1.2 Meg	
R79	10KΩ	½	B84103	BTS-10K	
R80	180KΩ	½	B84184	BTS-180K	
R81	2.2 Meg	½	B84225	BTS-2.2 Meg	
R82	1500Ω	½	B84152	BTS-1500	

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	NOTES
R83	1 Meg	½	B84105	BTS-1 Meg	
R84	15KΩ	½	D84153	BTB-15K	
R85	2200Ω	½	B84222	BTS-2200	
R86	100KΩ	½	B84104	BTS-100K	
R87	4.7Meg	½	B85475	BTS-4.7Meg	
R88	100KΩ	½	B84104	BTS-100K	
R89	27KΩ	½	B84273	BTS-27K	
R90	470KΩ	½	B85474	BTS-470K	
R91	6800Ω	½	C84682	BTS-6800	
R92	6800Ω	½	C84682	BTS-6800	
R93	33KΩ	½	B85333	BTS-33K	
R94	18000-5%	½	B83182	BTS-1800-5%	
R95	5600Ω	1	C83562	BTA-5600	
R96	150KΩ	½	B83154	BTS-150K	
R97	220KΩ	½	B83224	BTS-220K	
R98	100KΩ	½	B84104	BTS-100K	
R99	5600Ω	½	B84562	BTS-5600	
R100	470KΩ	½	B84474	BTS-470K	
R101	100Ω	2	D84101	BW-2-100	
R102	15KΩ	2	D84153	BTB-15K	Note 1
R103	56KΩ	½	B84563	BTS-56K	Note 2
R104	5.1Ω	½	43X339		
R105	1 Meg	1	C85105		
R106	10KΩ	5	43X272	1 3/4A-10K	
R107	1500Ω	15	43X275	2D-1500	
R108	330Ω	10	43X273	1 3/4 A-350	
R109	270KΩ	½	B85274	BTS-270KΩ	

Note 1 Some models use a 12KΩ resistor in this application.
Note 2 Not used in all models
† Items R61A, R61B, C54A, C54B, C54C are combinedin one unit.
♦ Items R75A, R75B, R75C, C59A, C59B, C59C are combinedin one unit.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
T1	117VAC	600VCT	5VAC	6.3VAC	53X324		P-3077		
	① 1.82 A	.240ADC	③ 3A	④ 1.1A			P-3074 ①		
				SEC. 4					
				6.3VAC					
				8.8A					

① Use for Secondary #3.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T2	194Ω	1100Ω	54X8	A-8125	A-3000 ①	TBO-2 ①	A-97X	Vert. Osc. Trans.
T3	440Ω tap ⑤ 10, 8.5	9Ω SEC. 2	53X326					Horiz. Output Trans.
	15 Ω, 240, 40Ω	0Ω						
T4	1600Ω		51X156	A-8141	A-3039		A-104X	Vert. Output Trans.
	Tap ⑤ 4.5Ω							
T5A	18Ω		9A2256	DY-9A	MDF-70	TY-3	Y-17	Horiz. Deflection Coils
B	50Ω		9A2274 ②					Vert. Deflection Coils

1. Drill one new mtg. hole.
2. Alternate deflection yoke.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	NOTES
T6	5.8KΩ	3.2Ω	495Ω	.9Ω	51X150A	A-3850	A-2981	RO-301	S-3X	

SPEAKER

ITEM No.	RATINGS: SIZE	RATINGS: FIELD	RATINGS: V. C. IMP.	REPLACEMENT DATA: TRUETONE PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	8"	PM	3.7Ω	C-12A477	ST-115	8A21	① Alternate 6" PM Speaker
				12A504 ①	Mod. P8-V		② Alternate 12" PM speaker
				12A502 ②			

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.
L1	.250A	51Ω	2.2 Hy.	52X90	C-2321 ①	C-2991 ①	TR-3300 ①	C-25A

① Drill one new mtg. hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	MERIT PART No.	NOTES
L2	Ant. Coil	0Ω	0Ω	9A2278-1		Channel 2
L3	RF Choke	0Ω		31B-296		
L4	Fil. Choke	0Ω		34A-546		
L5	RF, Mixer Grid & Osc. Coils	0Ω		9A2279-1		Channel 2
L6	Fil. Choke	0Ω		34A575		
L7	RF Choke	0Ω		31B-295		

TRUETONE MODEL 2D1230B

PARTS LIST AND DESCRIPTIONS (Continued)

(COILS RF-IF) CONT.

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TRUETONE PART No.	MERIT PART No.	
L8	1st. Video IF	1.1Ω		31A-078	TV-112	
L9	RF Choke	1.2Ω		31B-239		
L10	Fil. Choke	0Ω		9A2033		
L11	2nd. Video IF	.3Ω	.3Ω	9A2230		
L12	Fil. Choke	0Ω		9A2033		
L13	3rd. Video IF	.3Ω	.3Ω	9A2230		
L14	Fil. Choke	0Ω		9A2033		
L15	RF Choke	2.5Ω		9A1979	TV-180	36 Microhenries
L16	4th. Video IF	.1Ω		9A2226	TV-101	Includes Trap
L17	Series Peaking Coil	7.5Ω		36A10		60 Microhenries wound 22K resistor
L18	Shunt Peaking Coil	24Ω		36A11		500 Microhenries
L19	4.5MC Trap	.3Ω		9A2074	TV-151	
L20	Series Peaking Coil	2.5Ω		9A1979	TV-180	36 Microhenries
L21	Shunt Peaking Coil	7.5Ω		36A10		60 Microhenries wound on 1.5K resistor
L22	Series Peaking Coil	12.5Ω		36A12	TV-182	160 Microhenries wound on 22K resistor
L23	Shunt Peaking Coil	14Ω		36A2	TV-184	190 Microhenries
L24	1st. Sound IF	2.8Ω		9A2168		
L25	2nd. Sound IF	1.7Ω	1.7Ω	9A2170	TV-113	
L26	Ratio Det.	3.4Ω	.7 CT	9A2269		Tertiary winding .15Ω
L27	Horiz. Osc.	48Ω		9A2096	TV-163	
L28	Width Coil	.6Ω		9A2183		
L29	Horiz. Lin.	16Ω		9A2262		

FUSES

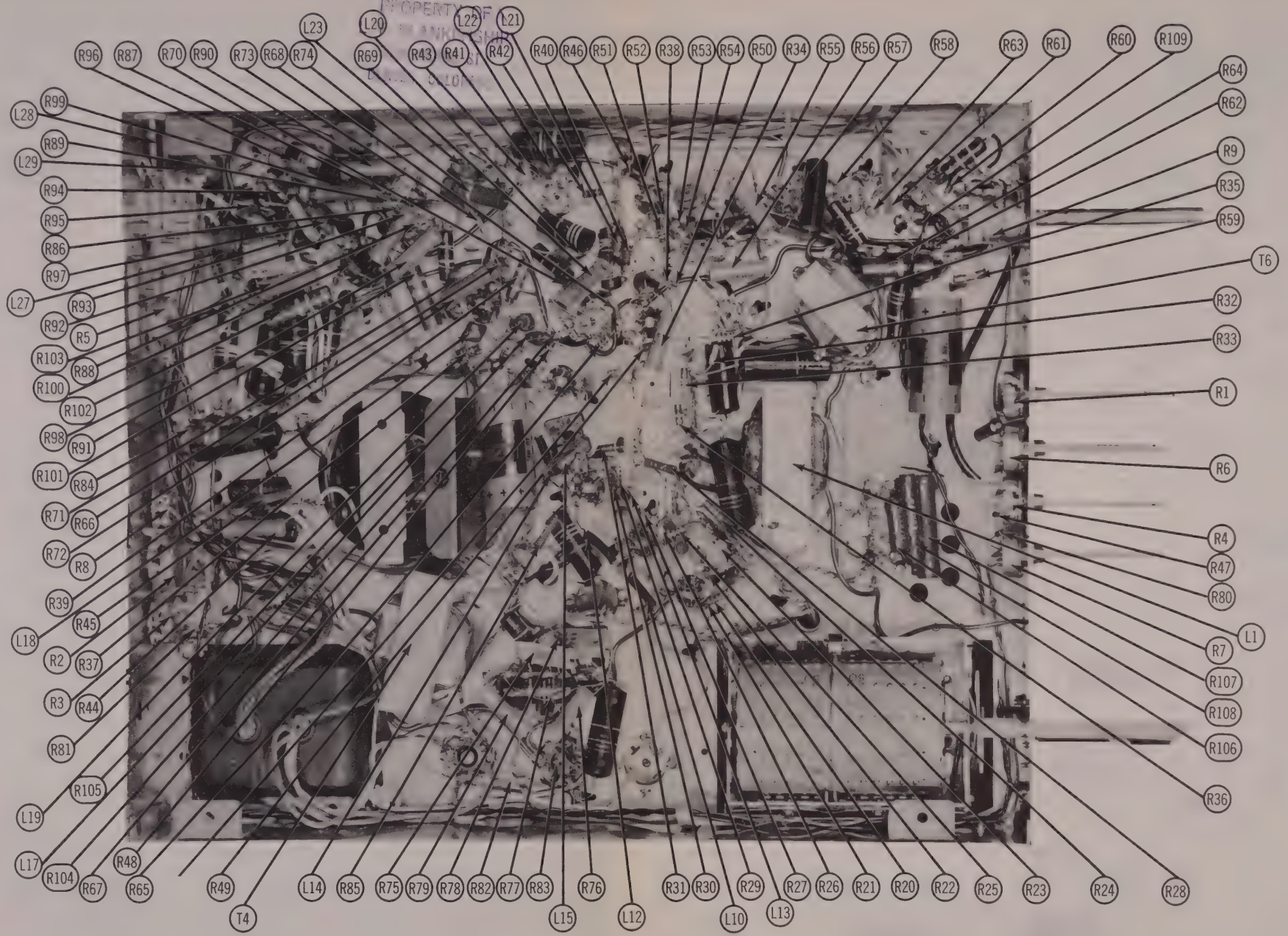
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			TRUETONE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG-Slo-Blo	4/10 A. 125V	16X147-3	16X146	313.400	357001	MDL-4/10	4405

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					TRUETONE PART No.		
M2	Bayonet	7.5	.2	white	7A32		Type #51

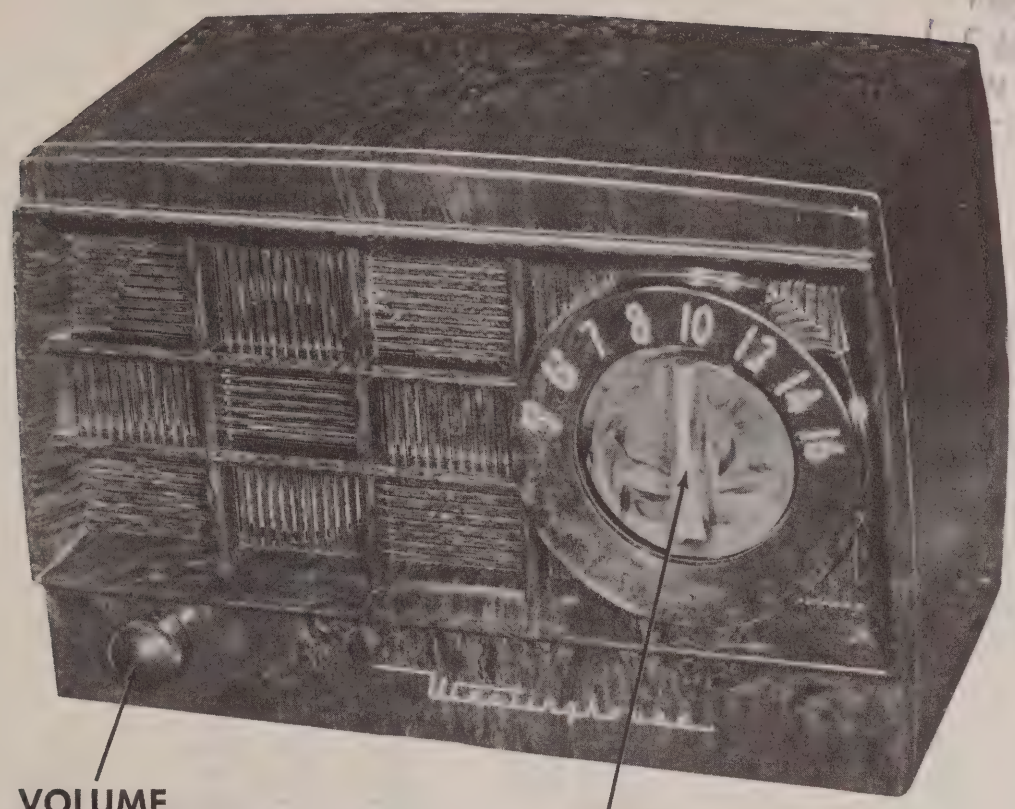
MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M3	RF Tuner	25A1095	
M4	Centering Magnet	2A419	
M5	Ion Trap	2A407	
	Ant. Coils	9A2278-2	Channel #3
	Ant. Coils	9A2278-3	Channel #4
	Ant. Coils	9A2278-4	Channel #5
	Ant. Coils	9A2278-5	Channel #6
	Ant. Coils	9A2278-6	Channel #7
	Ant. Coils	9A2278-7	Channel #8
	Ant. Coils	9A2278-8	Channel #9
	Ant. Coils	9A2278-9	Channel #10
	Ant. Coils	9A2278-10	Channel #11
	Ant. Coils	9A2278-11	Channel #12
	Ant. Coils	9A2278-12	Channel #13
	RF, Mixer Grid & Osc. Coil	9A2279-2	Channel #3
	RF, Mixer Grid & Osc. Coil	9A2279-3	Channel #4
	RF, Mixer Grid & Osc. Coil	9A2279-4	Channel #5
	RF, Mixer Grid & Osc. Coils	9A2279-5	Channel #6
	RF, Mixer Grid & Osc. Coil	9A2279-6	Channel #7
	RF, Mixer Grid & Osc. Coil	9A2279-7	Channel #8
	RF, Mixer Grid & Osc. Coil	9A2279-8	Channel #9
	RF, Mixer Grid & Osc. Coil	9A2279-9	Channel #10
	RF, Mixer Grid & Osc. Coil	9A2279-10	Channel #11
	RF, Mixer Grid & Osc. Coil	9A2279-11	Channel #12
	RF, Mixer Grid & Osc. Coil	9A2279-12	Channel #13
	Knob	10A779	Off/On Volume
	Knob	10A812	Channel Selector
	Knob	10A785	Fine Tuning
	Knob	10A786	Contrast
	Escutcheon	8-4X20	Control Panel
	Back Cover Assembly	814X58	
	Mask	4X1180	



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

WESTINGHOUSE
MODELS H-365T5, H-366T5 (Ch. V-2157-7)



WESTINGHOUSE
MODELS H-365T5, H-366T5 (Ch. V-2157-7)

TRADE NAME	Westinghouse Models H-365T5, H-366T5 (Ch. V-2157-7)
MANUFACTURER	Westinghouse Elect. Corp., TV-Radio Div., Sunbury, Pa.
TYPE SET	AC-DC Operated AM Superheterodyne Receiver
TUBES (Five)	Types 12BE6 Conv., 12BA6 IF Amp., 12AV6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC/DC — RATING .26 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1615 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF	High side to stator plates of rear section of tuning gang. Low side to B-.	455KC (400∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	1615 KC	"	"	A5	"
3.		Loop	1400 KC	Tune to 1400 KC signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

WESTINGHOUSE
MODEL H-365T5 (Ch. V-2157-7)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF Amp.	12AV6	12AV6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Westinghouse PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C1A	50	150	V-9991	PRS150/50-50		BRD5515A		TCD49	TVA-2453	
B	50	150								
C2	.05	200	RCP10W2503M	P288-05	DF-503	PJ2S5		PT415	2TM-S5	
C3A	220		♦V-10789-1		♦PC-150		♦1408-01		♦103C4	
B	.002									
C	.005									
D	250									
E	.									
C4	.01	400	RCP10W4103M	P488-01	D6-103	PTE4S1	GP2-333-103	PT411	4TM-S1	
C5	.047	400	V-10157-4473M	489ZGXY-05		PJ4S47			4TM-S47	
C6	.05	400	RCP10W4503M	P488-05	DF-503	PTE4S5		PT415	4TM-S5	

♦ Items C3A, C3B, C3C, C3D, C3E, R5A, R5B, R5C are combined in one unit.
When replacing items separately C3D and C3E should total 250MMF.

CONTROLS

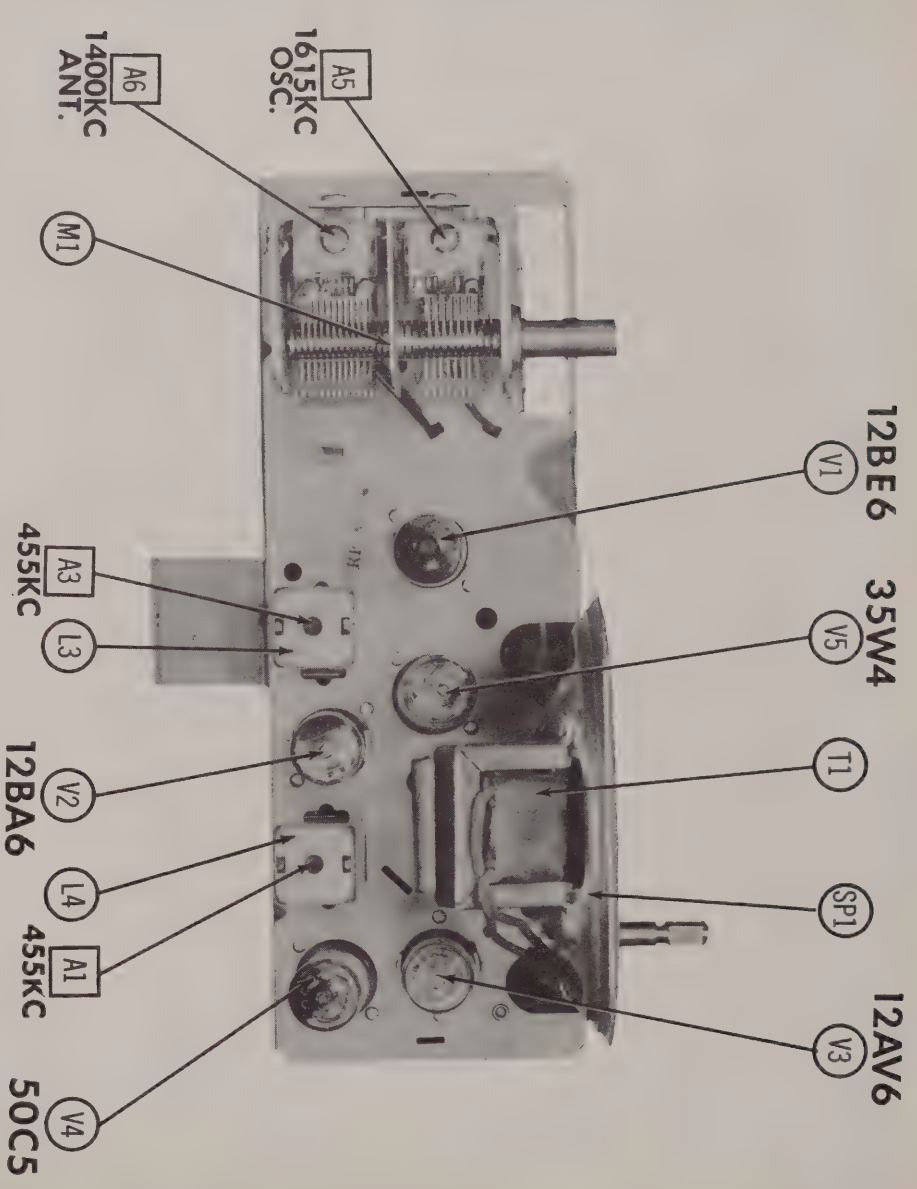
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Westinghouse PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	0500KΩ	½	V-9993-6	Q13-133	AG-60-Z	BSK-60-S	U-48	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWB	Not Req.	US-26	Attach to R1A

RESISTORS

ITEM No.	RATING: OHMS	RATING: WATT	REPLACEMENT DATA: Westinghouse PART No.	REPLACEMENT DATA: IRC PART No.	NOTES
R2	22KΩ	½	RC20AE223M	BTS-22K	
R3	3.3Meg	½	RC20AE335M	BTS-3.3Meg	
R4	68Ω	½	RC20AE680M		
R5A	6.8Meg	½		BTS-6.8Meg	
B	470KΩ	½	♦ V-10789-1	BTS-470K	
C	470KΩ	½		BTS-470K	
R6	150Ω	½	RC20AE151M	BTS-150	
R7	1000Ω	1	RC30AE102M	BTA-1000	
R8	22Ω	1	RC30AE220M		

♦ Items R5A, R5B, R5C C3A, C3B, C3C C3D, C3E are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		Westinghouse PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	2KΩ	3Ω	250Ω	.7Ω	V-9727-2	A-3332	A-3025	RO-2 ①	S-2X ①	① Drill one new mtg. hole

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	Westinghouse PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3Ω	V-9727-2	ST-113 Mod. P4-X	4A07	

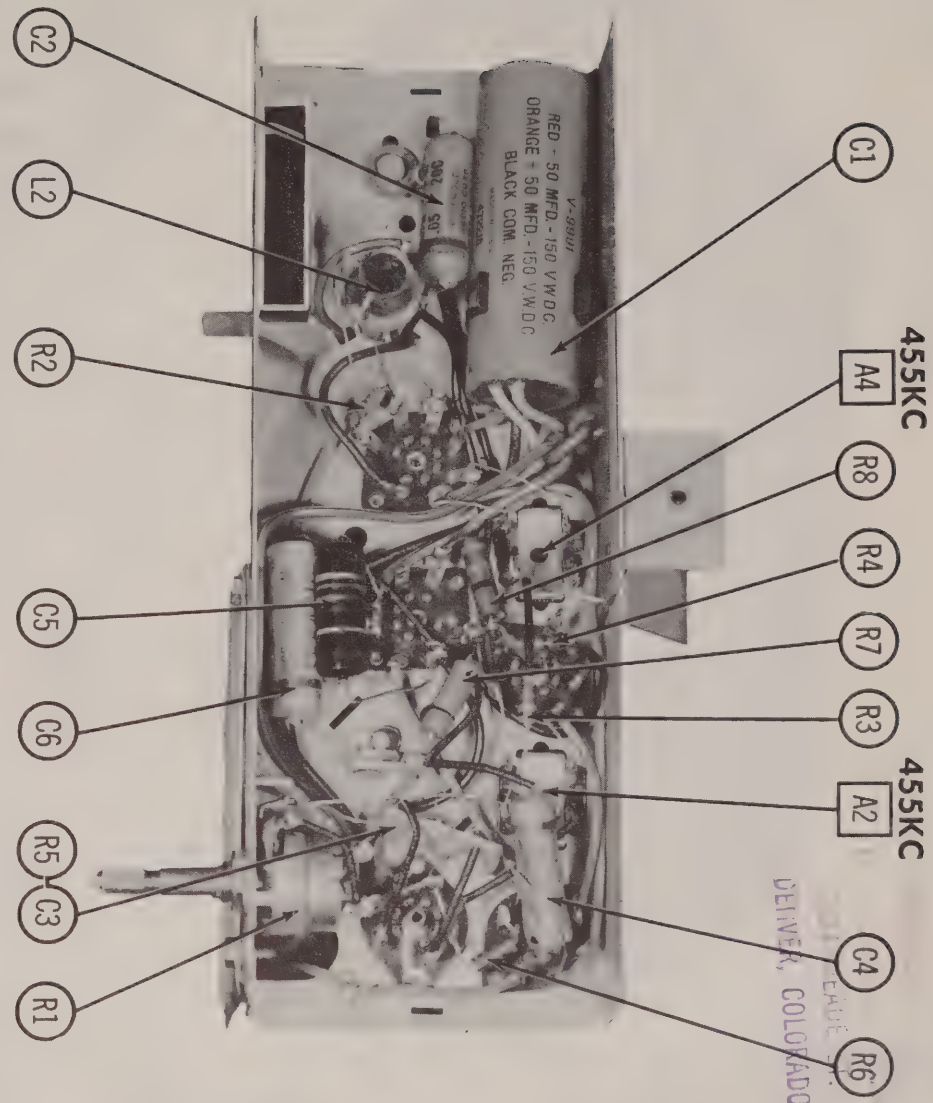
COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Westinghouse PART No.	MERIT PART No.	
L1	Loop Ant.	3.3Ω		V-11088-1		
L2	Osc. Coil	.8Ω	12Ω	V-9992		
L3	Input IF	18Ω	18Ω	V-10945-1		
L4	Output IF	18Ω	18Ω	V-10945-1		

MISCELLANEOUS

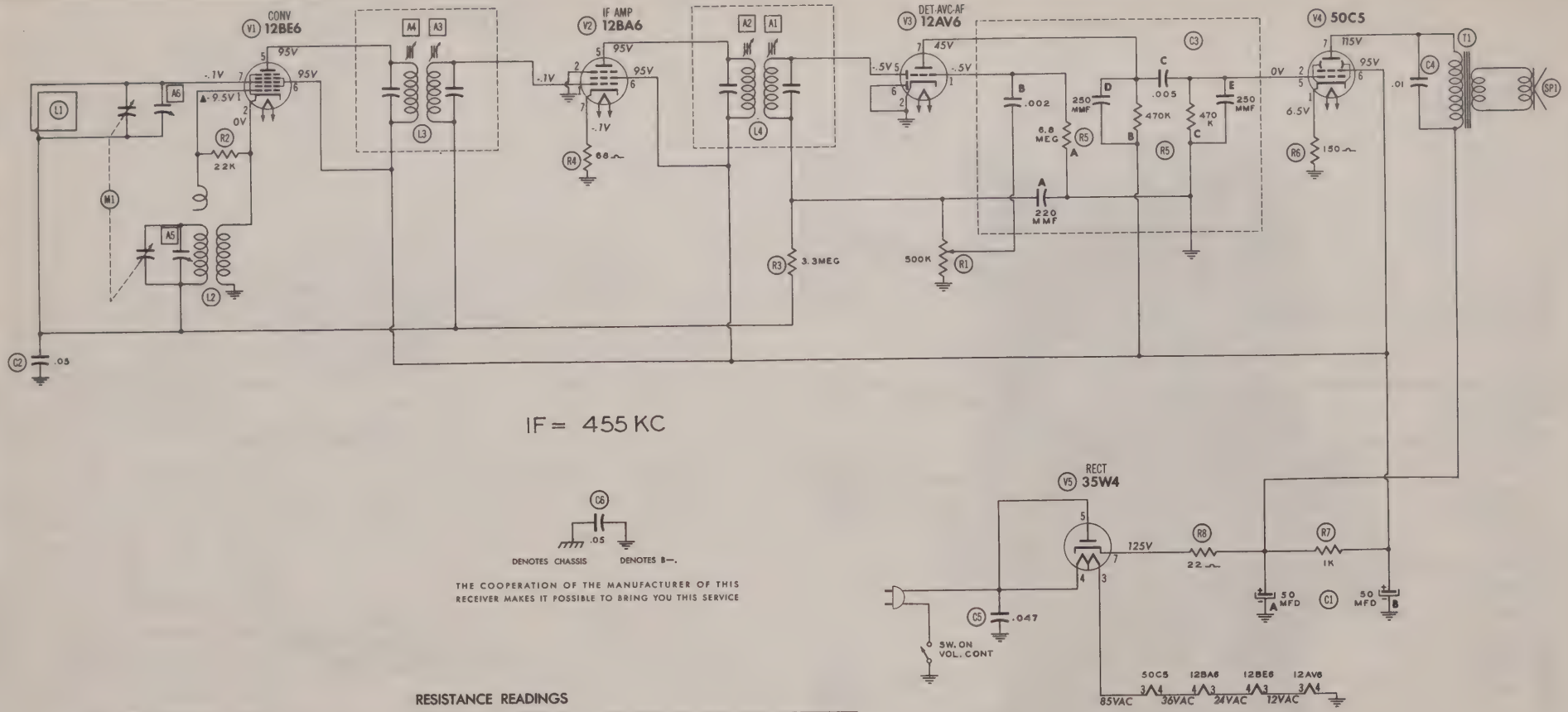
ITEM No.	PART NAME	Westinghouse PART No.	NOTES
M1	2 Gang Var. Cap.	V-11277-1	(19-465MMF, 13-182MMF)
	Cabinet	V-1266-1	Brown - Model H-365T5
	Cabinet	V-1266-2	Ivory - Model H-366T5
	Knob	V-11098-1	Tuning - Model H-365T5 (Includes Dial)
	Knob	V-11098-2	Tuning - Model H-366T5 (Includes Dial)
	Knob	V-10784-4	Volume - Model H-365T5
	Knob	V-10784-5	Volume - Model H-366T5

CHASSIS—BOTTOM VIEW



DENVER, COLORADO

WESTINGHOUSE
MODEL H-365T5 (Ch. V-2157-7)



IF = 455 KC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	1.8Ω	12Ω	24Ω	†1KΩ	†1KΩ	3.8Meg
V 2	12BA6	3.8Meg	0Ω	24Ω	36Ω	†1KΩ	†1KΩ	68Ω
V 3	12AV6	6.8Meg	0Ω	12Ω	0Ω	500KΩ	0Ω	†470KΩ
V 4	50C5	150Ω	470KΩ	86Ω	36Ω	470KΩ	†1KΩ	†272Ω
V 5	35W4	†22Ω	0Ω	86Ω	121Ω	121Ω	103Ω	60KΩ

† MEASURED FORM PIN 7 OF V5
▲ TAKEN WITH VACUUM TUBE VOLTMETER

185-15

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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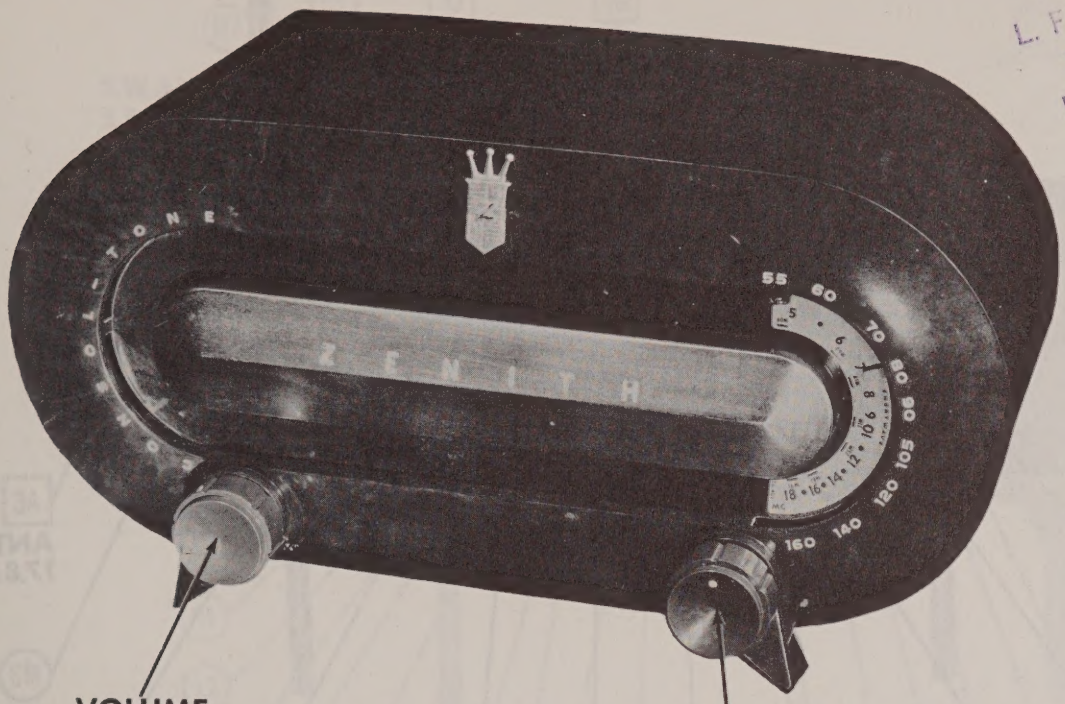
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

ZENITH
MODEL J420T (Ch. 4J60T)

PROPERTY OF
L. F. BLANKENSHIP
3324 MEADE ST.
DENVER, COLORADO

ZENITH
MODEL J420T (Ch. 4J60T)



ZENITH
MODEL J420T (Ch. 4J60T)

TRADE NAME	Zenith Model J420T (Ch. 4J60T)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave. , Chicago 39, Ill.
TYPE SET	Battery Operated BC-SW Superheterodyne Receiver
TUBES (Four)	Types 1L6 Conv., 1U4 IF Amp., 1U5 Det.-AVC-AF Amp., 3V4 Audio Output
POWER SUPPLY	1.5 Volts "A" Supply & 90 Volts "B" Supply in pack form
RATING	250 MA @ 1.5 Volts DC & 13MA @ 90 Volts DC
TUNING RANGE—BROADCAST	535-1620 KC SHORT WAVE 4.7MC -18MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (grid) of 1L6 (V1). Low side to chassis	455 KC (400~Mod.)	BC	600 KC	Across voice coil	A1, A2 A3, A4	Adjust for maximum output.
2.	400Ω and 200MMF in series	Thru dummy to antenna lead.	17.8MC	SW	17.8MC	"	A5, A6	Adjust in order given for maximum output.
3.	"	"	5.5MC	"	5.5MC	"	A7, A8	Adjust in order given for maximum output. Repeat step 2.
4.	"	"	1500 KC	BC	1500 KC		A9	Rock tuning gang while adjusting for maximum output.
5.	"	"	600 KC	"	600 KC	"	A10	Rock tuning gang while adjusting for maximum output. Repeat step.4.

Turn tuning gang fully closed and set pointer to an exactly vertical position near 550KC on the dial.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

ZENITH
MODEL J420T (Ch. 4J60T)

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		ZENITH PART No.	STANDARD REPLACEMENT		
V1	Converter	1L6	1L6	7DC	
V2	IF Amplifier	1U4	1U4	6AR	
V3	Det.-AVC-AF Amp	1U5	1U5	6BW	
V4	Audio Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1	■8	150	22-2230	AFH1-48		UP1045		FP143	TVL-1655	
C2	.047	400	22-1775	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C3	.68		22-1766		TCZ-.68		NP0K-R68			
C4	100	500	22-1442	1468-0001		5R5T1		MCB235	MS-31	
C5	4000		22-4	BPD-004	D6-402	TM5D4		UC-5240	5HK-D4	
C6	10000		22-3	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C7	.0047	400	22-1783	P688-0047	D6-472	PTE6D47	GP2-333-472	PT6247	6TM-D47	
C8	.0033	400	22-1780	P688-0033	D6-332	PTE6D33	GP2-333-332	PT6233	6TM-D3	
C9	.047	400	22-1775	P488-047	DF-503	PTE4S47		PT4147	4TM-S47	
C10	200		22-1668	S1200	D6-201	TM5T2	GP2K-201	UC-532	5GA-T2	
C11	10000		22-3	BPD-01	DD-103	TM5S1	821-01	DC-511	5HK-S1	
C12	.0022	600	22-1845	P688-0022	D6-222	PTE6D22	GP2-333-222	PT6222	6TM-D22	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	½	63-2799	Q13-137	AG-63-Z	BSK-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-2	SWB-2	Not Req.	US-27	Attach to R1A

RESISTORS

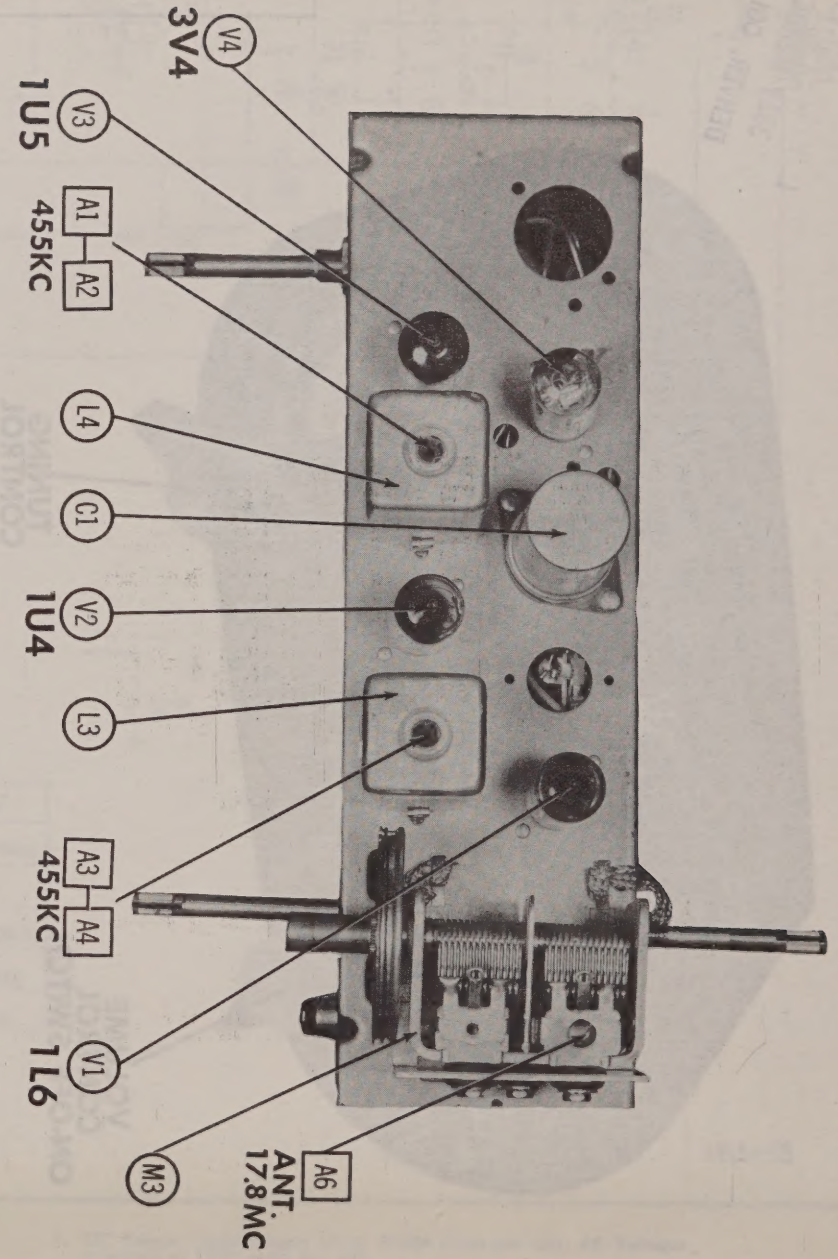
ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R2	330KΩ	½	63-1891	BTS-330K	
R3	100Ω	½	63-1743		
R4	180KΩ	½	63-1880	BTS-180K	
R5	33KΩ	½	63-1848	BTS-33K	
R6	6800Ω	½	63-1820	BTS-6800	
R7	1.5Meg	½	63-1919	BTS-1.5Meg	
R8	1000Ω	½	63-1785	BTS-1000	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ZENITH PART No.	IRC PART No.	
R9	330Ω	½	63-1764	BTS-330	
R10	10Meg	½	63-1954	BTS-10Meg	
R11	6.8Meg	½	63-1947	BTS-6.8Meg	
R12	1Meg	½	63-1912	BTS-1Meg	
R13	2.2Meg	½	63-1926	BTS-2.2Meg	
R14	430Ω	½	63-1769		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA					NOTES
	IMPEDANCE		DC RES.		ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	TRIAD PART No.	
	PRI.	SEC.	PRI.	SEC.						
T1	9.2KΩ	3.5Ω	714Ω	.48Ω	Part of spkr.	A-3879	A-2932	RO-16	S-11X	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4"	PM	3.5Ω	49-720	ST-113 Mod. P4-X	4A07	

COILS (RF-IF)

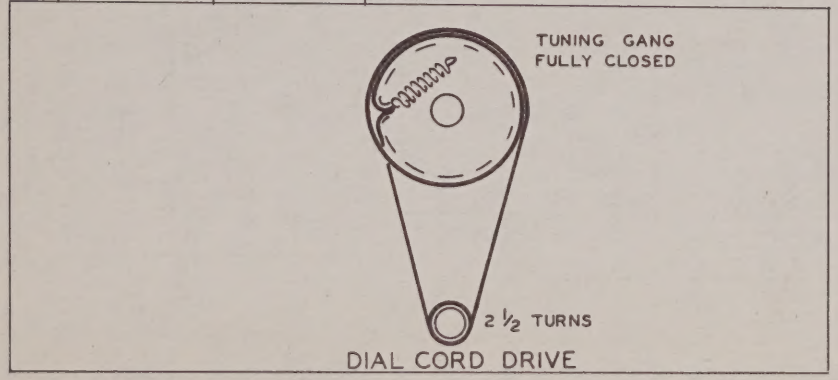
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ZENITH PART No.	MERIT PART No.	
L1A	SW Ant. Coil	.3Ω	.1Ω	S-18223		
B	BC Ant, Coil	20Ω	5.5Ω			
L2A	SW Osc. Coil	.1Ω	.5Ω	S-18896		
B	BC Osc. Coil	5.4Ω	.5Ω			
L3	Input IF	20Ω	20Ω	95-1136		
L4	Output IF	22Ω	21Ω	95-1137		

BATTERIES

ITEM No.	VOLTAGE	ZENITH PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	1.5 V. & 90V.	Z-28			758			17GD60	

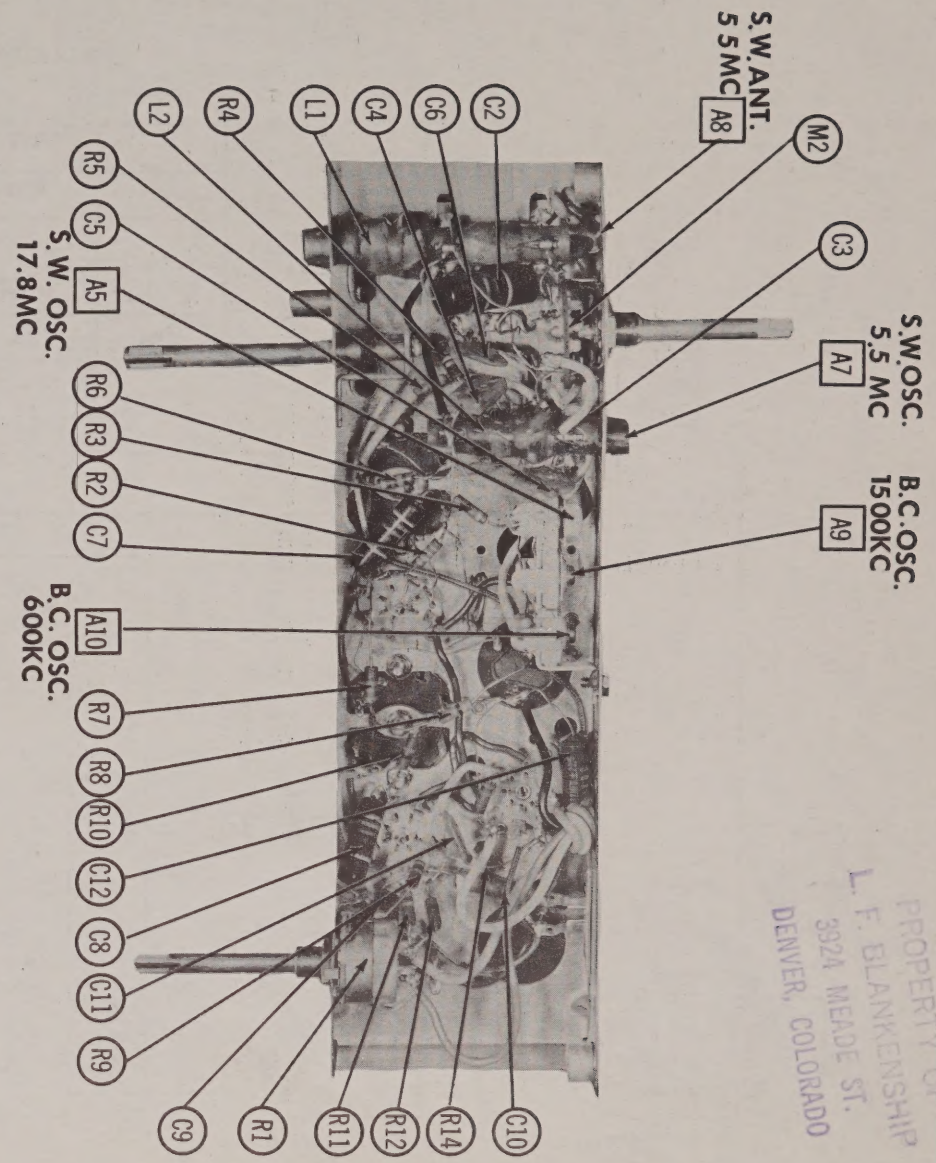
MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M2	Switch	85-513	Band
M3	2 Gang Var. Cap.	22-2316	(23-440MMF, 8-363MMF)
A5	Trimmer Strip	22-2211	SW Osc. Adj.
A9			BC Osc. Adj.
A10			BC Osc. Padder
	Cabinet	14-1295	
	Cabinet Back	2-235	
	Dial Scale	26-462	
	Pointer Assembly	S-18406	
	Knob	46-745	Tuning
	Knob	46-768	Volume
	Knob	46-863	Bandswitch



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



PROPERTY OF
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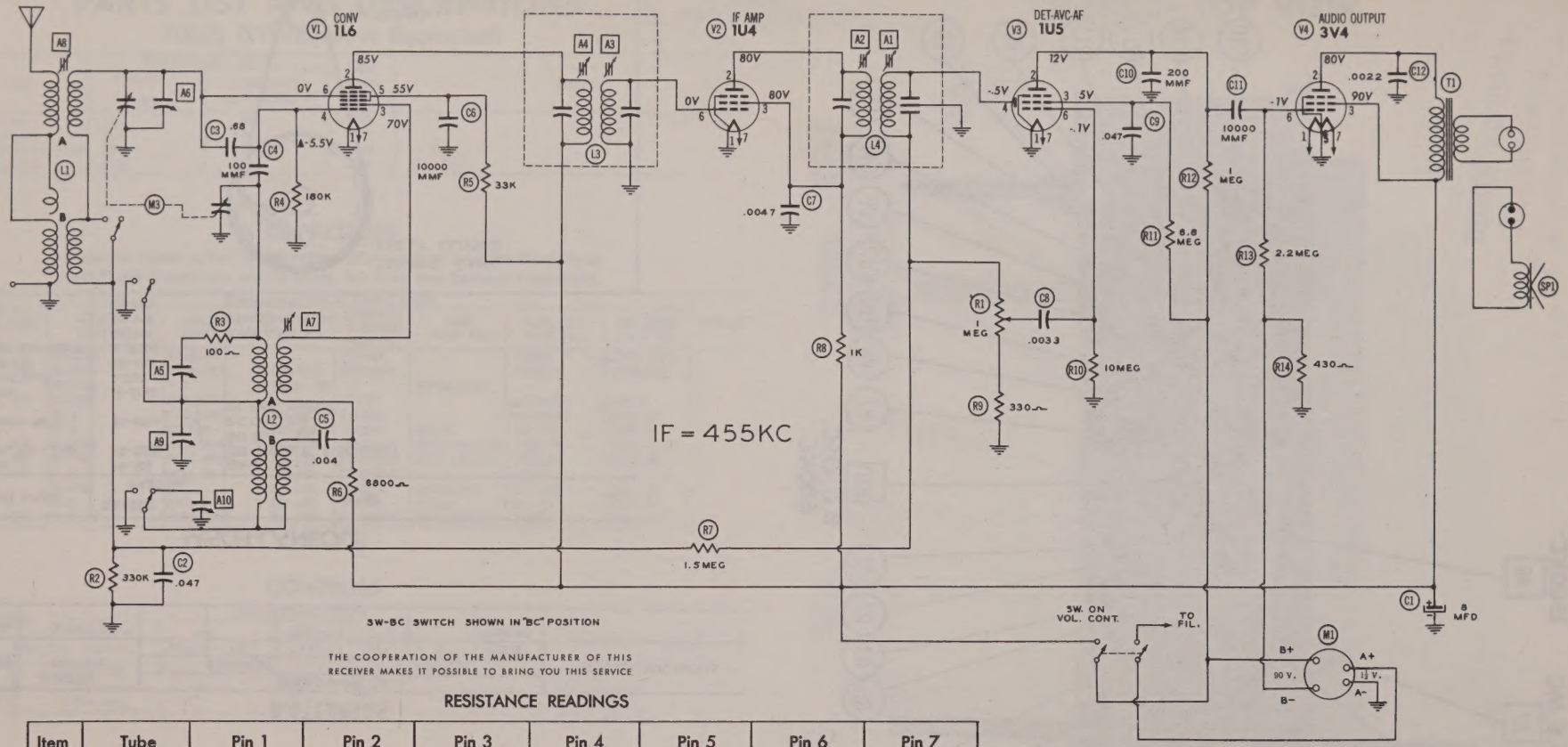
3924 MEADE ST.
DENVER, COLORADO

ZENITH
MODEL J420T (Ch. 4760T)



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1L6	0Ω	†20Ω	†6.8KΩ	180KΩ	†33KΩ	295KΩ	*
V 2	1U4	0Ω	†1KΩ	†1KΩ	295KΩ	0Ω	20Ω	*
V 3	1U5	0Ω	†1Meg	†6.8Meg	640KΩ	INF	10Meg	*
V 4	3V4	*	†714Ω	†0Ω	430Ω	0Ω	2.2Meg	*

ALL MEASUREMENTS TAKEN IN "BC" BAND ONLY
† MEASURED FROM 90V INPUT LINE
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1 - DC Voltage measurements are at 20,000 ohms per volt, AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5 - Volume control at maximum, no signal applied for voltage measurements.